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This study proposed that a basic list of spelling words could be grouped according to linguistic principles of sound-symbol relationships to provide effective spelling instruction. The corpus used in this study was the 1,163 words found in the spelling list developed by Walter Petty, selected for their high social utility in grades 2, 3, and 4. The words were phonetically transcribed and grouped into seven major word-classes. By identification of phoneme-letter representation and the position of the sound-unit variant, each of the seven major groups was divided into 243 teachable sub-groups and 180 isolates representing separate structural patterns. It was concluded that a basic spelling list of high social utility words, both "linguistically workable and socially useful," should not be discarded by teachers, and that a significant amount of spelling instruction should be devoted to the teaching of individual words, as well as to a linguistically-based grouping of words. Further research should be made of a more extensive basic spelling list and should test the actual effectiveness and appeal of a teaching approach to spelling instruction based on frequency of word usage and linguistic groupings. (JB)

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AN ANALYSIS OF A BASIC SPELLING LIST FOR POSSIBLE LINGUISTIC GROUPING OF WORDS

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THESIS

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

I. INTRODUCTION

Spelling the American-English language continues to be a baffling puzzle to many persons despite numerous studies of the problems involved. A variety of methodological procedures and instructional materials have been experimented with and developed, but many children continue to struggle helplessly when learning to spell. Many authorities consider the principal obstacle to learning as stemming from the inconsistent nature of the language itself. Such factors as the processes of borrowing words and sometimes their spelling from other languages, the changes in the production of sounds from time to time and in different parts of the country without corresponding changes in the way they are spelled, and the historical accidents of printers' preferences or dictionary-makers' errors have resulted in what is apparently illogical orthography for English.[1]

With the advent of a greatly expanded knowledge of linguistics by the turn of the twentieth century, principles concerning the language as they are related to spelling have become available. However, teachers and curriculum specialists have lacked knowledge of these principles and how they might be applied or if they might be applied. They have quite properly been reluctant to apply principles without evidence as to their effect or how the application should actually be made. Too, there has been fear that application might force the discarding of spelling books and methods teachers have become accustomed to using. Many persons have been especially concerned regarding the possible abandonment for spelling instruction of lists of words which were "selected and graded scientifically on the basis of writing needs of children at various stages of growth."[1] Furthermore, it is certainly true that it takes courage to depart from conventional practices and plunge unequipped and unguided into something seemingly "new" and radical. In fact, it may reflect poor judgment to do so.

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[1] Richard E. Hodges and Hugh E. Rudorf, "Searching Linguistics for Cues for the Teaching of Spelling," Elementary English, 42:528, May, 1965.

All of these concerns are very real and pose several questions such as: Are many of the concepts advanced from the current linguistic study really new? Have many teachers in reality been teaching linguistic principles for years?

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[1] James A. Fitzgerald, A Basic Life Spelling Vocabulary (Milwaukee: The Bruce Publishing Company, 1951), p. 3.

How can the principles be applied to the teaching of spelling? Can the words in an established spelling list be grouped according to these linguistic principles or will lists determined on the basis of social utility principles need to be abandoned? Will linguistically-based grouping suggest possibilities for changes in practices in the teaching of spelling? These are some of the questions which prompted this study and which it attempts to answer.

II. STATEMENT OF THE PROBLEM

The purpose of this study was to determine if the principles of sound-and-symbol relationships derived from linguistic studies can be applied to a basic list of spelling words of high social utility in order to group these words in an effective manner for teaching and learning.

The purpose was accomplished by analyzing such a basic spelling list for linguistic clues which could be used for this sound-symbol grouping. The final step was to actually group the words on the basis of this analysis.

III. DELIMITATIONS OF THE STUDY

The relatively small stock of words treated in this study and the rigid criteria established for determining each linguistic group limited the number of words appearing in each of the relatively diversified groupings. By the same token, the number of linguistic groups is limited to only those which can be derived from applying linguistic principles to the words found in the list analyzed. Thus, a larger corpus might have produced a greater number of groups and a greater number of words in each group. However, as the size of the corpus would increase the social utility of the total list would diminish.

IV. DEFINITIONS AND EXPLANATIONS OF TERMS USED

Linguistics is the study of language by following the precepts of the scientific method. The linguist studies languages in order to know and to understand their structures--the particular ways in which these languages are structured and used to achieve communication. He uses languages as the specific material upon which he works in much the same way the zoologist studies animal life in a variety of forms. Through the concrete evidence of the workings of a language, the linguist tries to understand its units and its working processes. The results of his work institute "linguistic science."[1] If he is a "structural linguist" he will analyze three aspects of a language:

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[1] Charles Fries, Linguistics and Reading (New York: Holt, Rinehart and Winston, Inc., 1963), pp. 35-36.

its sounds, its words, and its combinations of words. His work will result in a description of the structural characteristics of that language at a given point in time, usually the present.

Linguistic principles are generalizations developed from the findings of linguistic science. A principle is a synthesis derived or induced from observing and analyzing particulars, and therefore it has a wide or universal application.

Phonemes are the meaningful single sound-units of a language. A phoneme is a bundle of sound contrasts that function in identifying the word patterns of a language.[1] For example, the words *pit* /pit/ and *bit* /bit/ differ only in the initial sound-units /p/ and /b/. These variations produce the differences in the meanings of these words. Thus /p/ and /b/, represented by single letters *p* and *b*, are said to "contrast" with each other. Therefore, /p/ and /b/ are separate phonemes in the English language. Not all phonemes are represented by single letters, though. Some are represented by two letters and are called "digraphs." Examples of digraphs are the phonemes /θ/ as *th* in think;

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[1] *Ibid.*, p. 65.

/ð/ as *th* in though; /š/ as *sh* in ship; /č/ as *ch* in church and /ŋ/ as *ng* in ring.

Clusters are groups of two, three or even four phonemes which function as the contrasting sound-unit. For example, the consonant clusters /st/ and /str/ in initial position produce the contrasts in the meanings of the words *stand* and *strand*.

Sound-unit variant is the term used in this study to refer to the phoneme or the group of phonemes which produce the variation in meanings of the words placed in each group.

Morphemes, according to Gleason, are defined as the smallest meaningful units in the structure of the language.[1] A morpheme may be a single phoneme as /ey/ represented by *a* meaning "one" or "single." Or it may be a set of phonemes as /streynj/ represented by *strange* meaning "unknown," "unfamiliar" or "new."

Syntax is the arrangement of words into larger utterances such as phrases, sentences or sentences and phrases put together. This is a crucial feature of a language such as English, for the position of a word in a sentence can change not only the form but also the meaning of that word. In spelling homophones or words that sound alike but are different in appearance, such as weak and week, dependence must be upon syntax for meaning and thus for the orthography.

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[1] H. A. Gleason, *An Introduction to Descriptive Linguistics* (New York: Holt, Rinehart and Winston, 1961), p. 53.

Linguistic grouping in this study refers to the classifications made of the words analyzed, the classifications being made on the bases of identity of phonemic patterns except for a single sound-unit variant, identity of morphemes common to a group of words and difference in syntactic usage as in the case of homophones.

The term corpus refers to the 1,163 words analyzed in this study. These words are those presented for grade levels II, III and IV in the basic spelling list developed by Petty in 1959.[1]

Isolates are words which were considered not subject to classification by the application of linguistic principles with any of the groups.

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[1] Walter Petty, Improving Your Spelling Program (San Francisco: Howard Chandler Publications, 1959), pp. 26-29.

V. ORGANIZATION OF THE REMAINDER OF THE THESIS

Chapter II is a review of related literature, tracing the development of word lists from the sixteenth century to the present, and giving a brief over-view of the place given linguistics in word-list research.

Chapter III describes the materials and procedures used in the study. Chapter IV reports the analysis and findings of the study.

Chapter V summarizes the findings, gives conclusions drawn from the frame of reference provided by the analysis, and proposes further research.

The appendixes include an alphabetical listing of the words in the corpus, listings of the groups and sub-groups of words as these resulted from the analysis, and a suggested grade placement format for the words.

CHAPTER II

REVIEW OF RELATED LITERATURE

Interest in the ability to spell as an accepted social norm started in the eighteenth century when "illiteracy and even stupidity were linked with poor spelling, while education and intelligence were associated with the ability to spell according to accepted standards."[1]

This concern resulted in the production of a great number of word lists and groupings of words in an effort to help in the mastery of spelling.

I. EVOLUTION OF SPELLING WORD LISTS

One of the earliest spelling books or spelling lists was that of Richard Mulcaster which was published in 1582.[2] From then until 1885 lists were composed of 5,000 to 14,000 words arranged and organized in as many ways as there were authors. But the choice of words was unscientific and the value of learning them was questionable. Therefore, these spelling lists received the severest of criticism from teachers and parents.

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[1] Jean S. Hanna and Paul R. Hanna, "Spelling as a School Subject: A Brief History," The National Elementary Principal, 38:7, May, 1959.

[2] *Ibid.*, p. 9.

This criticism led to research in the selection of words to be included in spelling lists and books. The Teacher's Word Book by Thorndike and Horn's A Basic Writing Vocabulary were published in 1921 and 1926, respectively. Selection of words in these publications was based on the frequency counts of running words found in reading materials used in writing.

Coleman and Fitzgerald analyzed and criticized the methods used by Thorndike, Horn and others in determining vocabulary. This analysis and criticism led to the conclusion that too great a reliance had been placed upon adult materials. They also suggested that pupils' writing should make up the greater proportion of raw materials for future investigations.[1]

A revision of the Thorndike lists, A Teacher's Word Book of 30,000 Words, was made and published in 1944 by Thorndike and Lorge. Again, though, this list was composed principally of words used by adults.

One of the most exhaustive studies, and one which took into account the Coleman and Fitzgerald suggestions, was made by Rinsland. Rinsland analyzed more than six million running words gained from letters, themes, examination papers and incidental writing of elementary school children in many schools throughout the nation. This study was reported in *A Basic Vocabulary of Elementary School Children*, published in 1945, and its tabulation of word-use frequencies, grade by grade, has been a valuable source of information for authors of subsequent lists and for teachers.

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[1] Ibid., p. 10.

In 1954, the *New Iowa Spelling Scale* was published. It contained "5,507 words scientifically selected and of high social usefulness."[1] The words included in this list came from the three previous lists of Horn, Thorndike and Lorge, and Rinsland.

In 1959, Petty[2] published a list composed of words selected from *The New Iowa Spelling Scale*[3] based on their frequency within the first two thousand in *A Basic Writing Vocabulary*[4] or with a total frequency of two hundred or more in *A Basic Vocabulary of Elementary School Children*.[5]

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[1] Harry A. Greene, *The New Iowa Spelling Scale* (Iowa City: Bureau of Educational Research and Service, State University of Iowa, 1954).

[2] Walter Petty, *Improving Your Spelling Program* (San Francisco: Howard Chandler Publications, 1959).

[3] Greene, *loc. cit.*

[4] Ernest Horn, *A Basic Writing Vocabulary: 10,000 Words Most Commonly Used in Writing*, University of Iowa Monographs in Education, First Series, No. 4, April, 1926.

[5] Henry D. Rinsland, *A Basic Vocabulary of Elementary School Children* (New York: The Macmillan Company, 1945).

The words were graded by placing each word in the grade at which fifty per cent or more of the children spelled the word correctly as shown in *The New Iowa Spelling Scale*.

II. GROUPING WORDS FOR TEACHING

Along with research on the development of the basic spelling lists, similar efforts have been exerted towards organizing or grouping words for teaching to pupils. Several plans have been tried with the arrangements relevant to this study the groupings based on oral-aural similarities. Hanna and Hanna[1] give these historical examples.

> . . . As early as 1789, Perry and Thomas published a spelling book called *The Only Sure Guide to the English Tongue*, which presented the spelling words arranged in phonemic groupings. The introduction was followed by a grouping of simple, one-syllable words illustrating the short vowel sounds (can, pan, pet, tin, cup, etc.). . . .
>
> . . . In 1825 the *Pronouncing Spelling Book* of J. A. Cummings used an analogous phonemic presentation of words but with a better organization of material than that of Perry and Thomas. . . .
>
> . . . B. D. Emerson's *National Spelling* Book, 1831, employed the phonemic grouping of words and gave considerable attention to diphthongal vowels and unusual spellings of syllables (shun: cean, cion, sion). He also included 17 rules of spelling.

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[1] Hanna, *op. cit.*, p. 11.

Such arrangements, however, generally have not received much attention as a greater number and different criteria have gained favor as useful for grouping words for study. Similarity of meaning, alphabetical arrangement, ascending order of difficulty were some of the ways words were organized for presentation to pupils.

Apart from spelling, much interest in the scientific study of language emerged as a result of the work of linguistic scholars such as de Saussure and Boas in Europe and Bloomfield and Sapir in America. Bloomfield, especially, with his book Language, published in 1933, led the way to the achievements of present day American structural linguistics and, consequently, to the present interest in the grouping of words for spelling instruction according to linguistic principles.[1]

Perhaps the most hopeful contribution of linguistics to spelling instruction may be summed up as follows:

> Language is a system of oral symbols and writing is only a surrogate for the oral language. It is in effect, a symbol for a symbol. Therefore, the structure of the oral language should be reflected in the orthography of that language.[2]

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[1] Charles C. Fries, Linguistics and Reading (New York: Holt, Rinehart and Winston, 1963), p. 63.

[2] Richard E. Hodges and E. Hugh Rudorf, "Searching Linguistics for Cues for the Teaching of Spelling," Elementary English, 42:531, May, 1965.

The degree to which orthography truly represents language depends largely upon the nature of the system of writing. This is the crux of the relationship of linguistic knowledge to spelling instruction. As Fries pointed out in his book Linguistics and Reading, this relationship is not one to one. Fries said:

> The English Alphabet is phonemically based but it is not, as used for English, a "phonemic alphabet" in the sense that there is only one letter-symbol for each phoneme and only one phoneme for each letter-symbol. We cannot expect, therefore, to be able to match each letter of the English Alphabet, as it occurs in the graphic representation of English word-patterns, with an English phoneme. Although phonémically based, the individual letters of the alphabet with which we write do not stand in a one for one correspondence with the separate phonemes of our language.[1]

But more hopefully he added:

> But the view that English spelling is completely erratic or that it is so erratic that we must forgo all the advantage of an alphabetic system is entirely without foundation.[2]

The relative consistency with which phonemes are represented by the letters of the alphabet has been the subject of a number of recent studies. Of particular relevance to this study is the one made by Moore[3] in which an analysis of the phonetic elements found in three thousand words was made, leading to the conclusion that approximately four-fifths of the phonemes contained in the words comprising the spelling vocabulary of the elementary school child adhere to the alphabetic principle in their spellings or letter-representations.

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[1] Fries, op. cit., p. 160. [2] Ibid., p. 161.

[3] James T. Moore, Jr., "Phonetic Elements Appearing in a 3,000 Word Spelling Vocabulary" (unpublished Doctoral dissertation, Stanford University, Stanford, California, 1951).

These results agreed rather closely to those from a study conducted by Horn,[1] but only insofar as the most frequent spelling of the sounds differing considerably in some instances in the percentage which each spelling of a sound is the total and in the number of different spellings present.

The differences may be due to the greater number of words (ten thousand) analyzed by Horn, which, of course, contained a greater number of multi-syllabic words and which present more special spelling problems.

In 1964, Hodges[2] pursued the Moore study by using a much larger but selected corpus of 17,310 words. He, too, explored the phoneme-grapheme (the latter term was used for "letter representation") consistencies at the initial, medial, and final positions in a word. His sound-symbol, or grapheme-phoneme analysis was based on only one dialect, not taking into account variations in pronunciations, which was also the course pursued by Moore and Horn. He found that, without regard to their positions in syllables and to syllable stress, consonant phonemes are represented consistently eighty per cent of the time. He reported that vowels, however, do not achieve as high a percentage of consistency as consonants but that a "one to one correspondence is more nearly achieved than typically has been assumed."[1]

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[1] Ernest Horn, "Phonetics and Spelling," The Elementary School Journal, May, 1957.

[2] Richard Hodges, "An Analysis of the Phonological Structure of American-English Orthography" (unpublished Doctoral dissertation, Stanford University, Stanford, California, 1964).

The statistical data resulting from Hodges' study was utilized by Rudorf in the development of a set of rules for predicting graphic representation for use in spelling or representing a particular phoneme under varying conditions of position, stress and environment. A computer program was written which processed each of the 17,000 words in the corpus and thus would spell correctly all words in the corpus that are capable of being spelled on phonological principles alone and would indicate all words that can be spelled only by taking into consideration additional factors of morphology and/or syntax. He found that 49.87 per cent of the corpus, or 8,483 words, were spelled correctly by the computer; 36.4 per cent, or 6,195 words, were spelled with only one error in a word, 11.4 per cent, or 1,941 words, spelled with two errors and 2.3 per cent, or 390 words, spelled with three or more errors. From such findings, the author expressed optimism regarding the feasibility of using aural-oral generalization in spelling a high percentage of words.

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[1] Hanna, op. cit., pp. 4-5.

The studies reviewed above have shown that certain basic spelling lists have evolved from the needs of children and adults in written communication but that efforts have been exerted toward utilizing the findings of linguistics in spelling instruction. The question remains as to how many of the words found in a spelling list based upon the social utility of the words will lend themselves to the application of linguistic generalizations.

One study related to this question was made by Groff, who analyzed a sample of 1,101 words from The New Iowa Spelling Scale. Groff found that three out of every four words he studied were "not spelled entirely phonetically," but suggested that teachers should be aware of the large percentage of words which are only partly non-phonetic and that some method should be found for making pupils aware of this fact.[1]

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[1] Patrick J. Groff, "The New Iowa Spelling Scale: How Phonetic Is It?" The Elementary School Journal, October, 1961, 46-49.

CHAPTER III

MATERIALS AND PROCEDURES

As stated in Chapter I, the purpose of this study was to determine if the principles of sound and symbol relationships derived from linguistic studies can be applied to a basic list of spelling words of high social utility in order to group these words in an effective manner for teaching and learning.

The Corpus Used

The corpus used in this study was the 1,163 words found in the spelling list developed by Petty.[1] These words were identified in this list as basic to Grades II, III, and IV and were identified on the basis of their high social utility at these stages of children's growth.

Transcriptions Made

Each word in the corpus was written on a card (three-by-five inches) and marked phonetically by using A Pronouncing Dictionary of American English by Kenyon and Knott.[2] This phonetic transcription gave the detailed description of how each sound in a word is produced, and set the basis for a phonemic transcription, necessary for the purpose of the study. Francis said, "Until we have made an objective phonetic description in as much detail as we can, we cannot arrive at a knowledge of what the phonemes are."[1]

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[1] Walter Petty, Improving Your Spelling Program (San Francisco: Howard Chandler Publications, 1959).

[2] John S. Kenyon and Thomas A Knott, A Pronouncing Dictionary of American English (Springfield, Massachusetts: G. and C. Merriam Company, 1944).

The phonemic transcription of the words was made using the symbols developed by Trager and Smith. Just as Kenyon and Knott based their phonetic transcription on the language spoken by a majority of Americans, Trager and Smith produced phonemic symbols after an "overall analysis of English dialects collectively."[2] The phonemic symbols used are as follows:

Consonants

/b/ as in bill, tab
/d/ as in dill, Tadd
/f/ as in fill, taff
/g/ as in gill, tag
/h/ as in hill
/k/ as in kill, tack
/l/ as in Lil, till
/m/ as in mill, tam
/n/ as in nil, tan
/p/ as in pill, tap
/r/ as in rill, rear

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[1] Nelson W. Francis, The Structure of American English (New York: The Ronald Press Company, 1958), p. 158.

[2] Henry A. Gleason, Jr., An Introduction to Descriptive Linguistics (revised edition; New York: Holt, Rinehart and Winston, 1961), p. 324.

/s/ as in sill, Tass
/t/ as in till, tat
/v/ as in ville, have
/w/ as in will
/y/ as in yet
/z/ as in zeal, has
/θ/ as in thigh, cloth
/ð/ as in thy, clothe
/s/ as in shall, hash
/z/ as in rouge
/c/ as in chill, hatch
/j/ as in Jill, edge
/ŋ/ as in tang

Vowels (syllable nuclei)

/i/ as in bit
/e/ as in bet
/a/ as in bot or cot
/o/ as in gonna (colloquial of going to)
/u/ as in look
/æ/ as in bat
/ə/ as in but
/iy/ as in beat
/ey/ as in bait
/ay/ as in bite
/aw/ as in bout
/ow/ as in boat
/uw/ as in boot
/ɔ/ as in bought
/ɨ/ as in pretty

The Major Word-Groups

An overall view of the corpus easily showed that it could be divided into seven major groups. Thus, the words studied were first classified into the seven groups that follow:

1. Monosyllabic Base Words -- These words each contain a one-syllable nucleus without an affix. They carry the principal semantic

meaning of the structure. Examples of monosyllabic base words are bat, bite, both.

2. Duo- and Plurisyllabic Base Words -- These words contain two or more syllable nuclei each, without affixes and like the monosyllabic base words, they carry the principal semantic meaning of the structure. Examples of duo- and plurisyllabic base words are garden, under, October.

3. Words with -s Inflection -- These words contain the inflectional suffix -s. The s is an inflectional suffix because it is always final in a word with nothing more possible for addition to it. Semantically it denotes plurality and possession of nouns and singularity of the present tense form of verbs. Examples of words with -s inflection are boys, girls, goes.

4. Words with -d Inflection -- These words contain the -d inflectional suffix. As with the -s inflection, it is the final structure in a word. It signals the past tense of the verb to which it is affixed. Examples of words with -d inflection are talked, hunted, called.

5. Words with Other Affixes -- These words contain prefixes and suffixes other than -s and -d. Except the -n affix, the other affixes are derivational because they are not word final. Other affixes may still be added to them. Examples of words with other affixes are replace, badly, sixth.
6. Compounds -- In this study, these words are those composed of two or more independent bundles of sounds, each recognizable as a word. Examples of compounds are bedroom, within.
7. Contractions -- These are words composed of two or more words with an abbreviated form of one or more of them, signalled by the apostrophe sign. Examples of contractions are I'm for *I am*, o'clock for *of the clock*.

Sub-Groups Made

For each of the seven major groups, sub-groupings of the words were made. A sub-grouping was determined by the identity of phoneme-letter representation and the position of the sound-unit variant. Words containing the same phonemes represented by the same letters with the exception of only one, referred to in this study as the sound-unit variant, occurring in a similar position were grouped together. For example, a sub-grouping was formed out of the words bee, fee, see, tree, and three because the phoneme /-iy/ was represented by the letters -ee in all of them. They differed only in the initial sound-unit variants /b-/, /f-/, /s-/, /tr-/ and / r-/.

However, the sound-unit variant may occur in other positions. It may occur in the medial position as in washing and wishing, or in the final position as in meat, mean, and meal. The phonemes /miy-/ are represented by the letters mea-. The words varied only in the final sound-unit variant, the phonemes /-t/, /-n/, and /-l/.

In cases where a single sound-unit variant was not possible as in compounds or words with other affixes, sub-groups were determined by similarity of the position of the consistent word in compounds and similarity of affixes in words with affixes. For example, replace, return, report, recall are put together in a sub-group; nobody, somebody, and anybody were placed in another sub-group.

Arrangement of Sub-Groups

Sub-groups subordinate to a major group were arranged according to the position of the sound-unit variant and a descending order of productivity.

The first sub-groups were sound-unit variants occurring in the initial position. These were arranged in a descending order of productivity. The same thing was done with sound-unit variants in medial positions and in final positions. When there were the same number of words in two or more sub-groups, these sub-groups were arranged in an a, e, i, o, u succession of the syllable nuclei.

In case of isolates, they were listed alphabetically.

Grade Placement of the Words Analyzed

After the analysis, when the sub-grouping of the words was completed, these words were assigned to a grade level. The following procedure was used.

A sub-group was assigned to the original grade of the majority of the words composing it. For example, the sub-group -at, bat, cat, fat, hat, rat, flat, and that. Five of these were originally assigned to Grade II. Thus, this sub-group was placed at Level II in the new grade placement.

Computations Made

Computations were made to obtain the following numerical data.

1. Per cent of words in major groups.
2. Per cent of words in sub-groups under each major group.
3. Per cent of isolates.

CHAPTER IV

RESULTS OF THE STUDY

As stated in previous chapters, this study essentially involved an analysis of the structures of 1,163 words found in a basic spelling list for Grades II, III, and IV. The purpose of the analysis was to find aural-oral clues in the structural patterns of these words which could then be used for their grouping for spelling instruction.

The analysis showed that there were clues in the structural patterns of the words and that the corpus could be divided into seven major groupings with these then divided into 167 sub-groups. The major groups were labeled:

1. Monosyllabic Base Words
2. Duo- and Plurisyllabic Base Words
3. Words with -s Inflection
4. Words with -d Inflection
5. Words with Other Affixes
6. Compounds
7. Contractions

Since this study did not deal with word-classes but was directed to the searching for phonemic clues in spelling, each of the seven groups of words selected included two or more word-classes. For example, the monosyllabic base word group included nouns, verbs, pronouns, adjectives, prepositions, and articles.

The remainder of this chapter consists of more detailed descriptions of the major groupings identified into which the words in the corpus might be placed; identification of the sub-groups possible under each major grouping, with examples of words in each sub-group; the number of words placed in each sub-group; and the number of words not possible for placement in the sub-groups (identified as "isolates"). The actual listings of words into the various groupings are found in the appendixes.

Monosyllabic Base Words

As defined in Chapter III, a monosyllabic base word consists of a one syllable-nucleus and carries the principal semantic meaning of the structure. There were 627 words found to which this definition applies. These words were thus placed into this first and largest group. This number represents 54 per cent of the corpus. Of the 627 words, 572 were classified into sub-groups, with the number of words in the sub-groups ranging from two to thirteen. A total of 135 sub-groups containing sound-unit variants occurring in the initial position were identified, with a total of 486 words in these sub-groups. Table I identifies the 135 sub-groups of monosyllabic base words which have the sound-unit variant in the initial position. The table shows the phonemic representation, or linguistic identification, of each sub-group, and the letter representation, word sample, and the number of words found which fit in that sub-group.

There were eleven sub-groups identified which contained sound-unit variants occurring in the medial position. A total of 25 words were possible for placement in these sub-groups. Table II, page 37, identifies these sub-groups by their phonemic representations and gives the letter representations, word samples, and the number of words in each.

The analysis showed that there were words possible for grouping into 18 sub-groups with the sound-unit variants occurring in the final position. Forty-four words were placed into these sub-groups. Table III, page 38, identifies these sub-groups and gives the letter representations, word samples, and the number of words in each.

Three pairs of homophones were found among the monosyllabic base words. Homophones are words that sound alike but are spelled differently and differ in syntactic usage.

TABLE I

SUB-GROUPS OF MONOSYLLABIC BASE WORDS WITH THE SOUND-UNIT VARIANT IN THE INITIAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/-ey/	-ay	day	13
2	/-il/	-ill	bill	9
3	/-iŋ/	-ing	king	9
4	/-ow/	-ow	bow	9
5	/-ɔl/	-all	ball	8
6	/-æt/	-at	bat	8
7	/-et/	-et	bet	8
8	/-ay/	-y	by	8
9	/-eyk/	-ake	cake	7
10	/-ænd/	-and	band	7
11	/-eyt/	-ate	date	7
12	/-iyr/	-ear	dear	7
13	/-el/	-ell	bell	7
14	/-eyl/	-ail	jail	6
15	/-æn/	-an	man	6
16	/-iyt/	-eat	beat	6
17	/-en/	-en	hen	6
18	/-ik/	-ick	kick	6

TABLE I--Continued

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
19	/-ap/	-op	hop	6
20	/-æd/	-ad	bad	5
21	/-art/	-art	part	5
22	/-iy/	-e	be	5
23	/-iy/	-ee	bee	5
24	/-ayd/	-ide	hide	5
25	/-ayt/	-ight	fight	5
26	/-in/	-in	pin	5
27	/-ayn/	-ine	fine	5
28	/-ət/	-ut	but	5
29	/-eyǰ/	-age	page	4
30	/-eyr/	-air	hair	4
31	/-æp/	-ap	map	4
32	/-ar/	-ar	far	4
33	/-ark/	-ark	bark	4
34	/-æs/	-ass	pass	4
35	/-iys/	-each	beach	4
36	/-iyd/	-eed	feed	4
37	/-iyp/	-eep	deep	4
38	/-est/	-est	nest	4

TABLE I--Continued

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
39	/-ayz/	-ice	nice	4
40	/-ink/	-ink	pink	4
41	/-it/	-it	fit	4
42	/-ayt/	-ite	bite	4
43	/-ɔg/	-og	dog	4
44	/-owld/	-old	hold	4
45	/-uk/	-ook	book	4
46	/-ort/	-ort	fort	4
47	/-owz/	-ose	nose	4
48	/-at/	-ot	hot	4
49	/-awnd/	-ound	pound	4
50	/-awn/	-own	down	4
51	/-an/	-un	gun	4
52	/-eyz/	-ace	face	3
53	/-æk/	-ack	back	3
54	/-æg/	-ag	bag	3
55	/-eym/	-ame	game	3
56	/-æmp/	-amp	lamp	3
57	/-æŋk/	-ank	bank	3
58	/-ard/	-ard	hard	3

TABLE I--Continued

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
59	/-arm/	-arm	farm	3
60	/-æz/	-as	gas	3
61	/-eyv/	-ave	save	3
62	/-ed/	-ead	dead	3
63	/-iym/	-eam	team	3
64	/-iyt/	-eet	meet	3
65	/-end/	-end	send	3
66	/-ent/	-ent	rent	3
67	/-ay/	-ie	die	3
68	/-ayf/	-ife	life	3
69	/-ig/	-ig	big	3
70	/-aynd/	-ind	find	3
71	/-ip/	-ip	ship	3
72	/-ayr/	-ire	fire	3
73	/-is/	-ish	dish	3
74	/-iz/	-iss	kiss	3
75	/-ow/	-o	go	3
76	/-uw/	-o	do	3
77	/-owt/	-oat	boat	3
78	/-ak/	-ock	rock	3

TABLE I--Continued

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
79	/-o /	-ong	long	3
80	/-ud/	-ood	food	3
81	/-uwl/	-ool	pool	3
82	/-uwn/	-oon	moon	3
83	/-or/	-or	for	3
84	/-orn/	-orn	born	3
85	/-aw/	-ow	how	3
86	/-oy/	-oy	boy	3
87	/-ak/	-uck	duck	3
88	/-ul/	-ull	bull	3
89	/-ast/	-ust	dust	3
90	/-eyd/	-ade	grade	2
91	/-eyn/	-ain	rain	2
92	/-ɔhk/	-alk	talk	2
93	/-eyn/	-ane	cane	2
94	/-æθ/	-ath	bath	2
95	/-eyz/	-ase	base	2
96	/-æst/	-ast	fast	2
97	/-ɔ/	-aw	law	2
98	/-iy/	-ea	sea	2

TABLE I--Continued

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
99	/-iyd/	-ead	read	2
100	/-iyl/	-eal	meal	2
101	/-iyn/	-ean	mean	2
102	/-iyst/	-east	feast	2
103	/-ed/	-ed	bed	2
104	/-iyn/	-een	green	2
105	/-iyr/	-eer	deer	2
106	/-er/	-ere	there	2
107	/-yuw/	-ew	few	2
108	/-ayk/	-ike	hike	2
109	/-ayld/	-ild	wild	2
110	/-ilk/	-ilk	milk	2
111	/-im/	-im	him	2
112	/-iz/	-is	his	2
113	/-ayv/	-ive	five	2
114	/-iv/	-ive	give	2
115	/-iks/	-ix	fix	2
116	/-owl/	-ole	hole	2
117	/-am/	-ome	come	2
118	/-own/	-one	bone	2

TABLE I--Continued

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
119	/-uw/	-oo	too	2
120	/-or/	-ore	shore	2
121	/-owd/	-oad	load	2
122	/-owt/	-ote	note	2
123	/-awz/	-ouse	house	2
124	/-aw /	-outh	mouth	2
125	/-aks/	-ox	box	2
126	/-ac/	-uch	much	2
127	/-uw/	-ue	blue	2
128	/-amp/	-ump	jump	2
129	/-anc/	-unch	bunch	2
130	/-ant/	-unt	aunt	2
131	/-ag/	-ug	hug	2
132	/-ap/	-up	cup	2
133	/-ərn/	-urn	burn	2
134	/-az/	-us	bus	2
135	/-as/	-ush	rush	2
			TOTAL	486

TABLE II

SUB-GROUPS OF MONOSYLLABIC BASE WORDS WITH THE SOUND-UNIT VARIANT IN THE MEDIAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/b-rn/	b-rn	barn	3
2	/f-r/	f-r	far	3
3	/l-st/	l-st	last	3
4	/b-θ/	b-th	bath	2
5	/d-r/	d-r	deer	2
6	/l-v/	l-ve	live	2
7	/m-d/	m-d	mad	2
8	/p-t/	p-t	pet	2
9	/st-p/	st-p	step	2
10	/w-nt/	w-nt	want	2
11	/w-š/	w-sh	wash	2
			TOTAL	25

TABLE III

SUB-GROUPS OF MONOSYLLABIC BASE WORDS WITH THE SOUND-UNIT VARIANT IN THE FINAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/wi-/	wi-	win	4
2	/way-/	wi-e	wide	4
3	/key-/	ca-e	care	3
4	/i-/	i-	if	3
5	/miy-/	mea-	meal	3
6	/siy-/	see-	seed	3
7	/æ-/	a-	am	2
8	/kow-/	coa-	coal	2
9	/fiy-/	fee-	feel	2
10	/le-/	le-	leg	2
11	/aw-/	ou-	out	2
12	/ri-/	ri-	rich	2
13	/ruy-/	roo-	roof	2
14	/sey-/	sa-e	safe	2
15	/si-/	si-	sit	2
16	/sə-/	su-	sum	2
17	/ðə -l/	the-	them	2
18	/wər-/	wor-	word	2
			TOTAL	44

Table IV shows the three sub-groupings of these homophones.

TABLE IV

SUB-GROUPINGS OF THE HOMOPHONES IN THE MONOSYLLABIC BASE WORD GROUP

Sub-group Number	Phonemic Representation	Word Sample	No. in Group
1	/wiyk/	weak	2
2	/awr/	hour	2
3	/bay/	buy	2
		TOTAL	6

There were ten monosyllabic base words which were isolates in respect to the preceding sub-groupings. These words, however, could be placed in sub-groups of a different major grouping on the basis of their sound-symbol relationships. The ten words are the following:

belt
bird
cost
help
kid
none
post
rent
smoke
stove

Table V, page 40, summarizes the sub-grouping of the monosyllabic base words. The sum of the number of words in the sub-groups and the number of isolates does not equal

TABLE V

SUMMARY TABLE FOR THE SUB-GROUPS OF MONOSYLLABIC BASE WORDS

Monosyllabic Base Words in Corpus	627
Number of Sub-groups with the Sound-unit Variant in the Initial Position	135
Number of Words Placed in these Sub-groups	486
Number of Sub-groups with the Sound-unit Variant in the Medial Position	11
Number of Words Placed in These Sub-groups	25
Number of Sub-groups with the Sound-unit Variant in the Final Position	18
Number of Words Placed in These Sub-groups	44
Number of Sub-groups of Homophones	3
Number of Words in These Sub-groups	6
Number of Words Which Can Be Placed in Sub-groups of Other Major Groups	10
Total Number of Sub-Groups	167
Total Number of Words Classified	572
Total Number of Words Not Classifiable (Isolates)	76

the total number of monosyllabic base words since a word may belong to one or more of the sub-groups.

Duo- and Plurisyllabic Base Words

Duo- and plurisyllabic base words are words which contain two or more syllable nuclei. They do not have affixes and, as with the monosyllabic base words, they carry the principal semantic meaning of the structure. Eighty words, or seven per cent of the corpus, were found which fit this definition. Of these words, twenty-one were placed in sub-groups.

Fifteen of these words were placed in seven sub-groups in which the sound-unit variant occurs in the initial position.

Table VI, page 42, identifies these sub-groups and shows the phoneme representation, the letter representations, the word samples, and the number of words in each.

Two sub-groups were identified which have the sound-unit variant in a medial position. Four words were thus categorized as shown in Table VII, page 43.

One word was found that could be placed in sub-groups of a different major grouping on the basis of its sound-symbol relationship. The word was letter.

TABLE VI

SUB-GROUPS OF DUO- AND PLURISYLLABIC BASE WORDS WITH THE SOUND-UNIT VARIANT IN THE INITIAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/-aðər/	-other	mother	3
2	/-eybl/	-able	table	2
3	/- nə/	-any	many	2
4	/-aðər/	-ather	father	2
5	/-evər/	-ever	never	2
6	/-ambər/	-umber	lumber	2
7	/-evər/	-ver	ever	2
			TOTAL	15

TABLE VII

SUB-GROUPS OF DUO- AND PLURISYLLABIC BASE WORDS WITH THE SOUND-UNIT VARIANT IN THE MEDIAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/mæ-tər/	ma-ter	master	2
2	/sə-mər/	su-er	summer	2
			TOTAL	4

Table VIII, page 44, summarizes the sub-groupings of the duo- and plurisyllabic base words. The table shows the sub-groupings, the number of words classified in each, and the number of isolates.

Words with an -s Inflection

Words with an -s inflection contain the suffix -s and are placed in a separate classification and not with other words with affixes because of the large number which have this particular affix.

In this corpus, these words may either be the plural forms of nouns or the present tenses of verbs. There were 171 words found for this group, or 15 per cent of the corpus.

TABLE VIII

SUMMARY TABLE FOR THE SUB-GROUPS OF DUO- AND PLURISYLLABIC BASE WORDS

Duo- and Plurisyllabic Base Words in Corpus	80
Number of Sub-groups with the Sound-unit Variant in the Initial Position	7
Number of Words Placed in These Sub-groups	15
Number of Sub-groups with the Sound-unit Variant in the Medial Position	2
Number of Words Placed in These Sub-groups	4
Number of Sub-groups with the Sound-unit Variant in the Final Position	0
Number of Words Which Can Be Placed in Sub-groups of Other Major Groups	1
Total Number of Sub-groups	9
Total Number of Words Classified	19
Total Number of Isolates	61

There are two possible ways for grouping words with an -s inflection. The first is by the occurrence of a single sound-unit variant in the initial and medial positions.

From this possibility, 27 sub-groups were identified which have the sound-unit variant in the initial position. Sixty-one words were placed in these sub-groups. Table IX, page 46, identifies those sub-groups and gives the letter representations, word samples, and the number of words in each.

There were four sub-groups and a total of nine words identified which have the sound-unit variant in the medial position. Table X, page 48, gives the sub-groupings made.

Table XI, page 49, summarizes the sub-groupings made of the words with an -s inflection.

The second possible way of grouping words with an -s inflection is by utilizing the final phoneme of the base word.

The inflection -s has three types of sounds, symbolized by /s/, /z/ and /ɨz/, that occur at the end of words. On the basis of the sounds that end the base and immediately precede the -s, linguists have made the following generalizations:[1]

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[1] Theodore Glim, "A Study of Generalizations and Linguistic Structure in Spelling" (unpublished Doctoral dissertation, University of California, Berkeley, 1964), pp. 37-38.

TABLE IX

SUB-GROUPS OF -S INFLECTED WORDS WITH THE SOUND-UNIT VARIANT IN THE INITIAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/-eyks/	-akes	cakes	4
2	/-ɔlz/	-alls	calls	3
3	/-eyz/	-ays	days	3
4	/-izy/	-ees	bees	3
5	/-owts/	-oats	boats	3
6	/-aðərz/	-others	mothers	3
7	/-eymz/	-ames	games	2
8	/-ændz/	-ands	hands	2
9	/-ardz/	-ards	cards	2
10	/-armz/	-arms	farms	2
11	/-arz/	-ars	cars	2
12	/-arts/	-arts	parts	2
13	/-iynz/	-eans	beans	2
14	/-iyrz/	-ears	years	2
15	/-iyps/	-eeps	keeps	2
16	/-elz/	-ells	tells	2
17	/-ets/	-ets	gets	2
18	/-ents/	-ents	tents	2

TABLE IX--Continued

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
19	/-aydz/	-ides	rides	2
20	/-ivz/	-ives	gives	2
21	/-owlz/	-oles	holes	2
22	/-ownz/	-ones	bones	2
23	/-udz/	-oods	goods	2
24	/-uks/	-ooks	books	2
25	/-oyz/	-oys	boys	2
26	/-aks/	-ucks	ducks	2
27	/-anz/	-uns	guns	2
			TOTAL	61

TABLE X

SUB-GROUPS OF -S INFLECTED WORDS WITH THE SOUND-UNIT VARIANT IN THE MEDIAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/b-llz/	b-lls	balls	3
2	/f-rmz/	f-rms	forms	2
3	/l-gz/	l-gs	legs	2
4	/p-ts/	p-ts	pets	2
			TOTAL	9

TABLE XI

SUMMARY TABLE OF FIRST POSSIBLE SUB-GROUPING OF WORDS WITH -S INFLECTION

Words in Corpus with an -s Inflection	171
Number of Sub-groups with the Sound-unit Variant in the Initial Position	27
Number of Words Classified in These Sub-groups	61
Number of Sub-groups with the Sound-unit Variant in the Medial Position	4
Number of Words Classified in These Sub-groups	9
Total Number of Sub-Groups	36
Total Number of Words Classified	70
Number of Isolates	101

a. /s/ occurs after base words ending in /t, p, f, k, θ/ or the voiceless consonants.

b. /z/ occurs after base words ending in /d, g, m, n, l, r, y, ð, v, d, ŋ/ and all vowel sounds. These are all voiced sounds.

c. / z/ occurs after base words ending in sibilants or affricates.

The linguistic generalizations regarding the -s inflection apply to the spelling of the words in the following manner:[1]

a. Regardless of whether the -s inflectional suffix is voiced /z/ or unvoiced as /s/, the letter representation of that suffix is *s*, as is obvious in the words *hats* and *guns*.

b. If a word ends in a silent *e*, again the letter representation of the -s inflection is *s*, regardless of whether that suffix is voiced as in *grades* or unvoiced as in *takes*.

c. If a word ends in a silent *e*, the letter representation of the -s inflection is *s*, even if the extra syllable of /ɨz/ is added in its pronunciation, as in *roses*, *houses*, and *pages*.

d. If the base word terminates in a sibilant consonant sound /s/, represented by *s*, *ss*, and *x* as in *bus*, *dress*, and *fox*; or in the sibilant consonant sound /z/ represented by *z* as in *buzz* or in the sibilant consonant sound /s/, represented

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[1] *Ibid.*, pp. 41-42.

> by *sh* as in *wish*; or if the base word terminates in the affricate consonant sound /c/ represented by *ch* and *tch* as in *bench* and *watch*, the letter representation of the -s inflection sounded as / z/ is *es* as in dresses, foxes, buzzes, wishes, benches, and watches.

Using the linguistic generalizations as stated, 155 words were classified in 23 sub-groups with 16 words remaining as isolates.

There were two words that could be placed in sub-groups of a different major grouping on the basis of their sound-symbol relationships. The words were:

men
mice

Table XII, page 52, shows the sub-groupings made of the words with an -s inflection using the final phoneme of the base word as the determiner.

Table XIII, page 54, summarizes the second possible sub-groupings of the words with an -s inflection.

Words with a -d Inflection

Words in this group are the words with the preterit or past tense suffix -d. There were eighty-three words of this kind, representing seven per cent of the corpus.

In the same manner as the words with an -s inflection, the words with a -d inflection might be sub-grouped in two ways.

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TABLE XII

SECOND POSSIBLE SUB-GROUPINGS OF THE WORDS WITH AN -S INFLECTION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
/-s/ as -s				
1	/-ts/	-ts	boats	25
2	/-ks/	-ks	books	9
3	/-ps/	-ps	helps	7
/-s/ as es				
4	/-ks/	-kes	cakes	5
5	/-ts/	-tes	dates	2
/-z/ as s				
6	/-rz/	-rs	bears	22
7	/-dz/	-ds	beds	15
8	/-lz/	-lls	balls	11
9	/-nz/	-ns	beans	7
10	/-gz/	-gs	bugs	6
11	/-ŋz/	-ngs	rings	6
12	/-oyz/	-oys	boys	6
13	/-lz/	-ls	girls	4
14	/-mz/	-ms	arms	4
15	/-(V)wz/	-ws	cows	3

TABLE XII--Continued

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
		/-z/ as -es		
16	/-mz/	-mes	comes	7
17	/-(V)yz/	-yes	eyes	6
18	/-dz/	-des	grades	4
19	/-lz/	-les	apples	4
20	/-nz/	-nes	bones	4
21	/-vz/	-ves	gives	4
		/- z/ as -es		
22	/-eyɨz/	-es	faces	4
23	/-sɨz/	-shes	bushes	2
			TOTAL	165

TABLE XIII

SUMMARY TABLE OF SECOND POSSIBLE SUB-GROUPING OF WORDS WITH AN -S INFLECTION

Number of Words in Corpus with an -s Inflection	171
Number of Sub-groups with /s~z/ as -s	13
Number of Words Classified in These Sub-groups	115
Number of Sub-groups with /s~z/ as -es	8
Number of Words Classified in These Sub-groups	36
Number of Sub-groups with /ɨz/ as -es	1
Number of Words Classified in This Sub-group	4
Number of Sub-groups with /ɨz/ as -es	1
Number of Words Classified in This Sub-group	2
Total Number of Sub-groups	23
Total Number of Words Classified	165
Number of Words Which Can Be Placed with Other Sub-groups	2
Number of Isolates	4

The first way is by the single sound-unit variant criteria. Seven sub-groups, with a total of fourteen words, were identified which have the sound-unit variant in the initial position. Table XIV, page 56, reports the sub-groupings with the letter representations, the word samples, and the number of words in each sub-group.

Three sub-groups were formed of words with the sound-unit variant in the medial position. Table XV, page 57, identifies the sub-groups.

There were seven words found which are isolates for grouping in this major category but which can be placed in sub-groups of other major groups. They are as follows:

ate
bit
dug
fell
lay
made
might

Table XVI, page 58, summarizes the sub-groupings made of words with an inflected d.

The second possible way for the linguistic grouping of words with a -d inflection is by the use of the final phoneme immediately preceding the inflection.

The preterit suffix is symbolized by /t, d, ɨd/. On the basis of the sounds they follow, the following generalizations have been made regarding the pronunciation of the inflected d:[1]

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[1] *Ibid.*, p. 39.

TABLE XIV

SUB-GROUPS OF WORDS WITH A -D INFLECTION WHEN THE SOUND-UNIT VARIANT IS IN THE INITIAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/-æŋ/	-ang	rang	2
2	/-ukt/	-ooked	cooked	2
3	/- ɔkt/	-alked	talked	2
4	/-ɪld/	-illed	filled	2
5	/-eyd/	-ayed	played	2
6	/-td/	-ted	lasted	2
7	/-ɔd/	-ould	could	2
			TOTAL	14

TABLE XV

SUB-GROUPS OF WORDS WITH A -D INFLECTION WHEN THE SOUND-UNIT VARIANT IS IN THE MEDIAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/p-kt/	p-cked	packed	2
2	/w-st/	w-shed	washed	2
3	/l-vd/	l-ved	lived	2
			TOTAL	6

TABLE XVI

SUMMARY TABLE OF THE FIRST POSSIBLE SUB-GROUPING OF WORDS WITH A -D INFLECTION

Number of Words in Corpus with -d Inflection	83
Number of Sub-groups with the Sound-unit Variant in the Initial Position	7
Number of Words Classified in These Sub-groups	14
Number of Sub-groups with the Sound-unit Variant in the Medial Position	3
Number of Words Classified in These Sub-groups	6
Number of Words Which Can Be Placed in Other Sub-groups	7

a. /t/ occurs after base words ending in the sounds of /s, š, c, f, k, p/, or the voiceless consonants.

b. /d/ occurs after base words ending in the sound of /b, g, l, m, n, r, v, z, d, ž/ and all vowel sounds.

c. /ɨd/ occurs after base words ending in the sound of /t, d/.

The following statements summarize the ways the past tense or preterit suffix are represented by letters:[1]

a. Regardless of whether the past tense suffix is voiced as /d/, or is unvoiced as /t/, the graphic representation of that suffix is ed, as is obvious in the words rolled and jumped. If a verb ends in a silent e, only a d need be added to the terminal e in order to have ed represent graphically the voiced /d/ or the unvoiced /t/, as is seen in the words named and baked.

b. If a word ends in a silent e, only a d need be added to the terminal e, even though the extra syllable of /ɨd/ is added in its pronunciation, as in faded and hated.

c. If a verb base terminates in the sounds of /d/ or /t/, represented by the letters d or t as in end and hunt, the letter representation of the past-tense suffix sounded as /ɨd/ is ed, as in ended and hunted.

Applying the above generalizations in the second possible sub-grouping of words with a -d inflection, eleven sub-groups were formed, with a total of thirty-six words in them.

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[1] Ibid., p. 43.

Table XVII, page 61, shows these sub-groupings, with their phoneme identification, letter representations, sample or example words, and the number of words in each one.

Thirty-one words were found which could be placed in sub-groups of different major groupings on the basis of their sound-symbol relationships. They are the following:

ate
became
bit
came
did
drove
dug
fell
felt
found
gave
got
had
held
lay
lost
made
might
ran
sat
saw
sent
sold
spent
spoke
told
took
went
woke
won
wore

Table XVIII, page 62, summarizes the second possible sub-groupings of the words with a -d inflection.

Words with Other Affixes

These are the words which contain a base and an affix other than the -s and the -d inflection. There are 131 of this type of words in the corpus, representing ten per cent of the corpus. First consideration is given to the words having prefixes.

Words with prefixes. These words contain a base and a morpheme bound before it. Sub-grouping of these words was determined by the common morpheme in the group.

TABLE XVII

SECOND POSSIBLE SUB-GROUPING OF WORDS WITH A -D INFLECTION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
/-t/ as -ed				
1	/-kt/	- ked	asked	8
2	/-št/	-shed	washed	2
3	/-pt/	-ped	helped	2
/-d/ as -ed				
4	/-ld/	-lled	called	5
5	/-nd/	-ned	opened	2
6	/-eyd/	-ayed	played	2
/-d/ as -ed				
7	/-vd/	-ved	lived	4
8	/-owzd/	-sed	closed	2
/-td/ as -ed				
9	/-tɨd/	-ted	hunted	4
10	/-dɨd/	-ded	added	3
/-td/ as -ed				
11	/-tid/	-ted	dated	2
			TOTAL	36

TABLE XVIII

SUMMARY TABLE FOR THE SECOND POSSIBLE SUB-GROUPING OF WORDS WITH A -D INFLECTION

Number of Words with a -d Inflection	83
Number of Sub-groups with /-t ~d/ as -ed	6
Number of Words Classified in These Sub-groups	21
Number of Sub-groups with /-d/ as -ed	2
Number of Words Classified in These Sub-groups	6
Number of Sub-groups with /ɨd/ as ed	2
Number of Words Classified in These Sub-groups	7
Number of Sub-groups with /-ɨd/ as ed	1
Number of Words Classified in This Sub-group	2
Total Number of Sub-groups	11
Total number of Words Classified	36
Number of Words Which Can Be Placed with Other Major Groups	31
Number of Isolates	11

d.	Words with -day	4
e.	Words with -teen	1
f.	Words with -th	3
g.	Words with -ly	4
h.	Words with -y	6
	TOTAL	116

Words with the -ing suffix--

The -ing suffix, sounded as /i / at the end of the word, may mean "an action going on" or may be a gerund.

There are two possible ways for further categorizing of the words in this group. The first possible way was by the use of the single sound-unit variant occurring at the initial and medial positions.

Table XX shows the number of sub-groups and the words classified with the sound-unit variant in the initial position, with the letter representations, word samples, and number of words in each sub-group.

There were ten words which had prefixes, conforming to two sub-groupings. Eight words were classified in these sub-groups, leaving two isolates: delay and yesterday. Table XIX shows the sub-groups formed, with their phoneme identification, letter representations, sample words, and number of words in each one.

TABLE XIX

SUB-GROUPINGS OF WORDS WITH PREFIXES

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/ɔl-/	al + (base)	almost	4
2	/rə -/	re + (base)	recall	4
			TOTAL	8

Words with suffixes other than s and d. These are the words which have suffixes other than the -d and the -s and number 116 in the corpus. A break-down of these words and the number in each category was made as follows:

a.	Words with -ing	72
b.	Words with -er	17
c.	Words with -n	9

TABLE XX

SUB-GROUPS OF WORDS WITH THE -ING SUFFIX WHICH HAVE THE SOUND-UNIT VARIANT IN THE INITIAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/-eyɨŋ/	-aying	paying	4
2	/-owɨŋ/	-owing	showing	4
3	/-elɨŋ/	-elling	selling	3
4	/- hkɨŋ/	-alking	talking	2
5	/- lɨŋ/	-alling	calling	2
6	/-ilɨŋ/	-illing	filling	2
7	/-isɨŋ/	-ishing	fishing	2
8	/- kɨŋ/	-ooking	cooking	2
9	/-ayɨŋ/	- rying	crying	2
	Base Words Ending in Silent e Plus -ing			
10	/-eykɨŋ/	-aking	taking	2
11	/-ivɨŋ/	-iving	giving	2
				TOTAL 27

There are two words in the corpus which were placed in a sub-group because they have -ing suffixes and the sound-unit variant in the medial position. Table XXI shows this sub-grouping, with letter representation, word sample, and number of words in the sub-grouping.

TABLE XXI

SUB-GROUP OF WORDS WITH THE -ING SUFFIX
WHICH HAS THE SOUND-UNIT VARIANT
IN A MEDIAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/w-sɨŋ/	w-shing	washing	2
			TOTAL	2

Table XXII, page 67, summarizes the first possible sub-groupings of the words with an -ing suffix.

The second possibility for grouping words ending in -ing is by writing the base word as a whole and adding -ing. There were two sub-groups formed when this was done. These were the sub-groups composed of base words, plus -ing, and of

TABLE XXII

SUMMARY TABLE OF THE FIRST POSSIBLE SUB-GROUPING OF WORDS WITH AN -ING SUFFIX

Number of Words with an -ing Suffix in Corpus	72
Number of Sub-groups with the Sound-unit Variant in the Initial Position	11
Number of Words Classified in These Sub-groups	27
Number of Sub-groups with the Sound-unit Variant in the Medial Position	1
Number of Words Classified in These Sub-groups	2

base words ending in silent e, which drop the e when ing is added. Only the word getting was an isolate.

Table XXIII shows the second possible sub-grouping of words with an -ing suffix.

TABLE XXIII

SECOND POSSIBLE SUB-GROUPING OF WORDS WITH AN -ING SUFFIX

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/(base word)ɨŋ/	(base word)ing	asking	62
2	/(base word)ɨŋ/	(base word)~~e~~ing	coming	9
			TOTAL	71

Words with the suffix -er--

The suffix -er as used in this study refers to words which mean "one who" or is the comparative degree of adjectives and adverbs. The -er suffix sounded as /-ər/ may be written -er after the base word or r after base words written with silent -e. For convenience, words which are superlative degree adjectives were included in this group, making a total of seventeen words. Table XXIV shows the two sub-groups formed, with letter representations, word samples, and the number of words in each sub-group.

TABLE XXIV

SUB-GROUPS OF WORDS WITH THE SUFFIX -ER

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/(base word) r/	(base word)er	farmer	9
2	/(base word)r/	(base word)r	larger	2
			TOTAL	11

Five words were found not possible for categorizing in these sub-groups but possible for placement in other major groupings. These words are the following:

best	least	most
better	more	

The word less is an isolate.

Words with the -n suffix--

Nine words in the corpus have the -n suffix. The -n suffix may designate the past participle form of the verb as /teykən/ taken or maybe a participle as /gowldən/ golden. The -n is sounded /ən/ or syllabic /n/ and is usually spelled en or n. In some cases it is spelled ne as in done and gone. No isolates were found.

Table XXV shows the sub-grouping of words with the -n suffix, with the letter representations, word samples, and number of words in each sub-group.

TABLE XXV

SUB-GROUPS OF WORDS WITH THE -N SUFFIX

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/(base word) n/	(base word)en	eaten	3
2	/(base word) n/	(base word)n	given	3
3	/(base word)n/	(base word)ne	done	2
			TOTAL	8

Words with the -day suffix--

There are four words in the corpus which are names of the days of the week. For this study day was regarded as a suffix in order to make this grouping and to avoid having pupils deal with word elements such as Tues-, Wed-, and Fri-. These words were all placed in one sub-group, as shown in Table XXVI.

TABLE XXVI

SUB-GROUP OF WORDS WITH -DAY SUFFIX

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/-dey/	-day	Sunday	4
			TOTAL	4

Words with the -th suffix--

The -th suffix gives the meaning of the succession or ordinal arrangement of numbers. There are three words in this group in the corpus. Third can be sub-grouped with the bird group. The other two words, first and sixth, are identified here as isolates.

Words with the -ly suffix--

These words are adverbs and there are four of them in the corpus. They were all placed in one sub-group on the basis of the base plus the -ly suffix, as shown in Table XXVII. The -ly suffix is usually pronounced as /-lɨ/ or /-liy/.

TABLE XXVII

SUB-GROUP OF WORDS WITH THE -LY SUFFIX

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/(base word)lɨ/	(base word)ly	badly	4
			TOTAL	4

Words with the -y suffix--

The suffix -y pronounced as /-ɨ/ or /-iy/ has several meanings as used in this corpus. It may mean "small" as in puppy, a "state or quality" as in funny, or a form of endearment as in daddy. Structurally, the letter following the significant syllable nuclei is doubled. One word, busy, was identified as an isolate.

Table XXVIII shows the sub-group formed of words with the -y suffix, with letter representation, word sample, and number of words in the sub-group.

TABLE XXVIII

SUB-GROUP OF WORDS WITH -Y SUFFIX

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/(base word plus duplication of last letter) /	(base word plus duplication of last letter)y	funny	5
			TOTAL	5

Table XXIX, page 74, summarizes the sub-groupings of words with other than -s and -d affixes.

Compounds

Compounds as used in this study refers to words which consist of two or more base words. The meaning of the resulting combination may be derived from any one of the bases composing it, or from an entirely different one. For example, the word forget is composed of for and get which are independent base words. However, the resulting word forget does not mean anything akin to any of the two elements composing it.

TABLE XXIX

SUMMARY TABLE OF THE SUB-GROUPING OF WORDS WITH OTHER AFFIXES

Type	Number in Corpus	Number of Sub-groups	Number of Words	Number of Isolates
Prefixes	10	2	8	2
Suffixes:				
-ing	72	2	71	1
-er	17	2	11	1
-n	9	3	8	0
-day	4	1	4	0
-teen	1	0	0	1
-th	3	0	0	2
-ly	4	1	4	0
-y	6	1	6	1
TOTALS	126	12	112	8

There were sixty compounds in the corpus analyzed or six per cent of the total number of words.

Sub-groups were determined by the consistent base occurring in a particular position. The unit variant, the other base, might occur in either the initial or the final position.

Table XXX, page 76, shows the distribution of compounds to the sub-groups in which the consistent base occurs in the initial position with the base variant in the final position.

Table XXXI, page 77, identifies the sub-groups of compound words in which the consistent base is in the final position and the variant base is in the initial position.

Table XXXII, page 78, summarizes the sub-groupings of compounds.

Contractions

Contractions are abbreviated forms of a combination of two or more words. The meaning of the "contracted" words is signalled by an apostrophe ('). Sub-groups of contractions were determined by the meaning of the contracted word. There are seven contractions in the

TABLE XXX

SUB-GROUPS OF COMPOUNDS IN WHICH THE BASE VARIANT IS IN THE FINAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/ə(base)/	a + (base)	across	11
2	/bə(base)/	be + (base)	become	7
3	/səm(base)/	some + (base)	somebody	5
4	/ənə(base)/	any + (base)	anyone	4
5	/in(base)/	in + (base)	inform	3
6	/eyr(base)/	air + (base)	airplane	2
7	/evr (base)/	every + (base)	everything	2
8	/for(base)/	for + (base)	forget	2
9	/grænd(base)/	grand + (base)	grandfather	2
10	/awt(base)/	out + (base)	outfit	2
11	/reyl(base)/	rail + (base)	railroad	2
12	/tə(base)/	to + (base)	today	2
13	/wiθ(base)/	with + (base)	within	2
			TOTAL	46

TABLE XXXI

SUB-GROUPS OF COMPOUNDS IN WHICH THE BASE VARIANT IS IN THE INITIAL POSITION

Sub-group Number	Phonemic Representation	Letter Representation	Word Sample	No. in Group
1	/(base)self/	(base) + self	herself	4
2	/(base)θɨŋ/	(base) + thing	anything	4
3	/(base)sayd/	(base) + side	beside	3
4	/(base)wey/	(base) + way	away	4
5	/(base)bad /	(base) + body	nobody	2
6	/(base)evər/	(base) + ever	however	2
7	/(base)wən/	(base) + one	anyone	2
8	/(base)hwər/	(base) + where	anywhere	2
			TOTAL	23

TABLE XXXII

SUMMARY TABLE FOR THE SUB-GROUPS OF COMPOUNDS

Number of Compounds in Corpus	69
Number of Sub-groups with the Base Word Variant in the Final Position	13
Number of Words Classified in These Sub-groups	46
Number of Sub-groups with the Base Word Variant in the Initial Position	8
Number of Words Classified in These Sub-groups	24
Total Number of Sub-groups	21
Total Number of Words Classified	69
Number of Isolates	13

NOTE: Some words were sub-grouped more than once.

corpus. Using the criteria as mentioned, all are identified as isolates. They are as follows:

can't
don't
won't
I'll
I'm
it's
o'clock

Summary

Table XXXIII, page 80, summarizes the findings of the study, indicating the major linguistic groupings found for the words in this corpus with the number of words in each and the percentage of each in the corpus, the number of isolates, and the number of words classified.

Eighty words, or fifteen per cent of the corpus, were identified as "isolates" in the corpus. These are the words which could not be placed in any sub-group on the basis of any of the criteria used.

Nine hundred eighty-three words, or eighty-five per cent of the corpus, were classifiable in sub-groups.

TABLE XXXIII

SUMMARY TABLE FOR THE MAJOR GROUPS, THEIR SUB-GROUPS AND ISOLATES

Major Groups	No. of Words in Group	Per Cent in Corpus	No. of Isolates	No. of Words Classifiable
Monosyllabic Base Words	627	54	76	551
Duo- and Plurisyllabic Base Words	80	7	61	19
Words with -s Inflection	171	15	4	167
Words with -d Inflection	83	7	11	72
Words with Other Affixes	126	10	8	118
Compounds	69	6	13	56
Contractions	7	1	7	0
TOTALS	1,163	100	180	983

CHAPTER V

SUMMARY AND CONCLUSIONS

I. SUMMARY

The Problem

Spelling American-English is difficult as most persons would agree and as many studies have shown. Researchers have examined the nature of its problems and particularly the most effective arrangement of words for presenting them to pupils for learning. The arrangement of a list of words might appear to many persons to have little effect upon learning to spell. However, a second reflection might lead to the conclusion that arrangement could have a possible bearing upon the learning of generalizations or clues to the spelling of words that were in some manner related to the words in the particular list and, thus, could be useful. Most listings of spelling words in a lesson have taken cognizance of the possibilities for grouping words. This study is based upon the assumption that the grouping or arrangement of words may have a bearing upon the success pupils have in learning to spell them.

With the advent of interest in linguistics at the turn of the twentieth century, educators have increasingly tried to explore its possibilities for the solution of some of the problems in teaching the language arts, including spelling. Some educators have expressed great optimism toward the utilization of linguistic principles in alleviating spelling learning difficulties. On the other hand, others are less optimistic regarding these possibilities and particularly hold to the opinion that any new plan for solving spelling problems must be grounded in sound research evidence rather than be based upon a theory alone.

The purpose of this study was to attempt to group the words in a basic spelling list through the application of linguistic principles. A secondary purpose, then, was to use these groupings for placement of the words into a graded list that might be of practical use. Basically, thus, the objective was to determine if the principles of sound and symbol relationships derived from linguistic studies can be applied to a basic list of spelling words of high social usefulness.

Materials and Methods

The corpus analyzed was composed of 1,163 words suggested for Grades II, III, and IV in a basic spelling list.

The structural patterns of the words were analyzed, with words of similar structural patterns being grouped together. From this major grouping, sub-groups were formed. Each sub-group was formed on the basis of all of the words having an identical phonemic pattern except for a single sound-unit variant, a common morpheme, or having an identical phonemic pattern but with a difference in syntactic usage, as in the case of homophones.

Findings from the Analysis

The findings of this study are summed up briefly in the following points.

1. The analysis showed that the corpus could be divided into seven major groups. These groups are as follows:
    a. Monosyllabic Base Words. These are one-syllable root-words without any affixes. There were 627 words in this group.
    b. Duo- and Plurisyllabic Base Words. These are root-words of two or more syllables without any affixes. There were eighty words in this group.
    c. Words with an -s Inflection. These are words with -s suffix which in this study

were either the plural of nouns or the singular present tense forms of verbs. There were 171 words in this group.

d. Words with a -d Inflection. These are words with a -d suffix which in this study were the preterit or simple past-tense forms of verbs. There were eighty-three words in this group.

e. Words with Other Affixes. These were the words in the corpus which had prefixes or which had other than -s or -d suffixes. There were 126 words in this group.

f. Compounds. These words were the words in the corpus composed of two or more independent elements. There were sixty-nine in this group.

g. Contractions. These are words which are a contracted or abbreviated form of two or more words with the contraction shown by the use of the apostrophe. There were seven contractions in the corpus.

2. On the basis of any one of the criteria used in sub-grouping the words, 243 sub-groups were formed. The number of words in the sub-groups ranged from two to fourteen each.

3. One out of almost every seven words in the corpus was found to be an isolate, defined in this study as a word with a sound-letter relationship differing from any sub-group. There were 180 isolates found in the corpus.
4. The analysis showed 423 structural patterns were present in the corpus of 1,163 words. Of the 423 structures, 243 are the sub-groups identified and 180 are the isolates (as described in this study).

II. CONCLUSIONS

From the frame of reference formed by the findings in this study, the following conclusions have been drawn:

1. The grouping of spelling words in consideration of linguistic principles is not new. Teachers have used a similar grouping in cases in which they have taught "rhyming words" together.
2. A basic spelling list of high social utility words was found to have eighty-five per cent of its words subject to a linguistic grouping, thus suggesting itself as both linguistically workable and socially useful. The essential

fact of this conclusion is that such a list should not be discarded nor abandoned because of the current interest in the application of linguistic principles.

3. The 180 isolates found in this study, or fifteen per cent of the corpus, is a significant finding. Since each isolate represents a separate structural pattern, each must be taught as a single learning unit. Thus, a significant amount of spelling instruction must be devoted to the teaching of individual words.
4. Linguistically-based grouping does not imply a radical or complete change in practices in the teaching of spelling. Rather, it suggests a possibility in presenting words in teachable groups for spelling instruction.

Limitation

A limitation to the extent of generalizing from this study was established by the small number of words in the corpus analyzed. A much larger corpus, including words for the higher grades, would possibly have given different results.

III. SUGGESTIONS FOR FURTHER RESEARCH

As a result of the present study, the following suggestions for further studies are advanced:

1. An analysis should be made of an expanded corpus of words but again holding to words found in a basic spelling list originally formulated on the basis of the social utility of the words.
2. The actual effectiveness of a linguistic grouping of words in teaching should be studied, with such a study giving proper attention to experimental design and to testing the extent of transfer of sound to letter representation or spelling ability to words not in the spelling lessons.
3. A study should also be made to determine the appeal of a linguistic grouping of words to teachers and to pupils.
4. An investigation should be made into how truly socially useful are lists of words selected on the basis of a word-count of how frequently a word is used.

BIBLIOGRAPHY

BIBLIOGRAPHY

A. BOOKS

Bloomfield, Leonard and Clarence L. Barnhart. *Let's Read.* Detroit: Wayne State University Press, 1961.

Fitzgerald, James A. *A Basic Life Spelling Vocabulary.* Milwaukee: The Bruce Publishing Company, 1951.

_______. *The Teaching of Spelling.* Milwaukee: The Bruce Publishing Company, 1951.

Francis, Nelson W. *The Structure of American English.* New York: The Ronald Press Company, 1958.

Fries, Charles C. *Linguistics and Reading.* New York: Holt, Rinehart and Winston, 1963.

Gleason, Henry A., Jr. *An Introduction to Descriptive Linguistics.* Revised edition. New York: Holt, Rinehart and Winston, 1961.

Greene, Harry A. *The New Iowa Spelling Scale.* Iowa City: Bureau of Educational Research and Service, State University of Iowa, 1954.

_______ and Walter T. Petty. *Developing Language Skills in the Elementary School.* Second edition. Boston: Allyn and Bacon, Inc., 1963.

Hildreth, Gertrude. *Teaching Spelling.* New York: Henry Holt and Company, 1955.

Horn, Ernest. *A Basic Writing Vocabulary: 10,000 Words Most Commonly Used in Writing.* Iowa City: University of Iowa Monographs in Education, First Series, No. 4, April, 1926.

Kenyon, John S. and Thomas A. Knott. *A Pronouncing Dictionary of American English.* Springfield, Massachusetts: G. and C. Merriam Company, 1944.

Lefevre, Carl A. *Linguistics and the Teaching of Reading.* New York: McGraw-Hill Book Company, 1964.

Petty, Walter. *Improving Your Spelling Program.* San Francisco: Howard Chandler, Publisher, 1959.

Rinsland, Henry D. *A Basic Vocabulary of Elementary School Children.* New York: The Macmillan Company, 1945.

Thorndike, Edward and Irving Lorge. *Teachers' Word Book of 30,000 Words.* New York: Bureau of Publications, Teachers College, Columbia University, 1944.

B. PERIODICALS

Botel, Morton. "What Linguistics Says to This Teacher of Reading and Spelling," *Reading Teacher*, 18:188-193, December, 1964.

Carroll, John B. "Linguistics and the Psychology of Language," *Review of Educational Research*, 34:119-126, April, 1964.

Groff, Patrick J. "The New Iowa Spelling Scale: How Phonic Is It?" *The Elementary School Journal*, 62:46-49, October, 1961.

Hanna, Jean S. and Paul R. Hanna. "Spelling as a School Subject: A Brief History," *The National Elementary Principal*, 38:8-23, May, 1959.

Hanna, Paul and James Moore. "Spelling--From Spoken Word to Written Symbol," *Elementary School Journal*, 53:329-337, February, 1953.

________ and Jean S. Hanna. "Applications of Linguistics and Psychological Cues to the Spelling Course of Study," *Elementary English*, 42:753-759, November, 1965.

________ and Richard F. Hodges. "Spelling and Communications Theory," *Elementary English*, 40:483-505, May, 1963.

Hodges, Richard E. "The Psychological Bases of Spelling," *Elementary English*, 42:629-635, October, 1965.

________ and E. Hugh Rudorf. "Searching Linguistic Cues for the Teaching of Spelling," *Elementary English*, 42:527-533, October, 1965.

Horn, Ernest. "Phonetics and Spelling," _The Elementary School Journal_, 57:424-432, May, 1957.

Horn, Thomas D. "Research in Spelling," _Elementary English_, 37:174-177, March, 1960.

Lester, Mark. "Graphemic-Phonemic Correspondences as the Basis for Teaching Spelling," _Elementary English_, 41:748-752, November, 1964.

Marksheffel, Ned D. "Composition, Handwriting and Spelling," _Review of Educational Research_, 34:177-183, April, 1964.

Petty, Walter T. "Phonetic Elements as Factors in Spelling Difficulty," _Journal of Educational Research_, 51:209-214, November, 1958.

Smith, H. L. "A Review of Let's Read, A Linguistic Approach," _Language_, 35:67-78, 1963.

Yee, Albert H. "The Generalization Controversy on Spelling Instruction," _Elementary English_, 43:154-161, February, 1966.

C. UNPUBLISHED MATERIALS

George, Sister Louis Joseph. "Grouping of Words According to Structure and Use as a Factor in Building Spelling Power." Unpublished Master's thesis, Cardinal Stritch College, Milwaukee, Wisconsin, 1964.

Glinn, Theodore E. "A Study of Generalization and Linguistic Structure in Spelling." Unpublished Doctoral dissertation, University of California, Berkeley, 1964.

Hodges, Richard E. "An Analysis of the Phonological Structure of American-English Orthography." Unpublished Doctoral dissertation, Stanford University, Stanford, California, 1951.

Moore, James T., Jr. "Phonetic Elements Appearing in a Three Thousand Word Spelling Vocabulary." Unpublished Doctoral dissertation, Stanford University, Stanford, California, 1951.

Rudorf, E. Hugh. "The Development of an Algorithm for American-English Spelling." Unpublished Doctoral dissertation, Stanford University, Stanford, California, 1964.

United States Office of Education. "Phoneme-Grapheme Relationships Basic to Cues for Improvement of Spelling," U.S.O.E. Cooperative Research Project No. 1991, Stanford University, Stanford, California, 1965.

APPENDIX A

AN ALPHABETICAL LISTING OF THE WORDS ANALYZED

AN ALPHABETICAL LISTING OF THE WORDS ANALYZED

able
about
above
across
act
add
added
after
afternoon
again
age
ago
ahead
air
airplane
airport
all
almost
alone
along
already
also
always
am
an
and
another
any
anyone
anything
anyway
anywhere
apart
apple
apples
April
are
arm
arms
around
art
as
ask
asked
asking
asleep
at
ate
aunt
away
baby
back
bad
badly
bag
ball
balls
band
bank
bark
barn
base
bat
bath
be
beach
beans
bear
bears
beat
became
because
become
becomes
bed
bedroom
beds
bee
bees
before
begin
behind
being
bell
bells
belong
below
belt
beside
besides
best
bet
better
big
bill
bills
bird
birds
birthday
bit
bite
black
blank
block
blow
blowing
blue
boat
boats
body
bone
bones
book
books
boots
born
both
bow
box
boy
boys
brave
bread
brick
bright
bring
brings
brother
brothers
brought
brown
brush
bugs
bull
bunch
burn
burning
bus
bushes
busy
but
butter
buy
buying
by
cage
cake
cakes
call
called
calling
calls
came
camp
camping
can
candy
cane
cannot
can't
cap
car
card
cards
care
carry
cars
cart
case
cash
cat
catch
cats
cattle
cave
cent
cents
chair
chairs
cheer

child
children
city
class
clay
clean
clear
climb
clock
close
closed
clown
club
coal
coat
coats
cold
come
comes
coming
cook
cooked
cooking
cool
corn
cost
could
count
cover
covering
covers
cow
cows
cowboy
cream
crop
cross
cry
crying
cup
cut
dad
daddy
dance
danger
dark
date
dated
dates
day
days
dead
dear
deep
deer
delay
desk
did
die
dig
dinner
dish
dishes
do
does
dog
dogs
doing
doll
dolls
don't
done
door
doors
down
draw
drawing
dream
dress
dressed
drink
drive
drop
drove
dry
duck
ducks
dug
dust
each
ear
early
ears
earth
east
eat
eaten
eating
eats
egg
eggs
eight
end
ended
enter
eve
even
ever
every
everyone
everything
eye
eyes
face
faces
fall
falling
falls
far
farm
farmer
farmers
farming
farms
fast
faster
fat
father
fathers
fear
feast
fee
feed
feeding
feel
feet
fell
felt
few
fight
fill
filled
filling
find
finding
fine
finger
fire
first
fish
fishing
fit
five
fix
flag
flat
flower
flowers
fly
flying
food
foods
foot
football
for
forest
forget
forgive
forgot
form
forms
fort
found
four
fox
Friday
friend
frog
from
full
fun
funny
fur
game
games
garden
gas
gate

gave
gay
get
gets
getting
gift
girl
girls
give
given
gives
giving
glad
glass
go
goat
God
goes
going
gold
golden
good
good-bye
goods
gone
got
grade
grades
grand
grandfather
grandmother
grass
gray
great
green
ground
grow
growing
gun
guns
had
hair
half
hall
hand
hands
hanging
happen
happy
hard
has
hat
hate
hats
have
having
hay
he
head
heads
hear
hearing
heat
held
help
helped
helping
helps
hen
her
here
herself
hide
high
higher
hike
hill
hills
him
himself
his
hit
hog
hold
holding
hole
holes
home
homes
hook
hop
hope
hopes
horn
hot
hour
hours
house
houses
how
however
hug
hunt
hunted
hunting
hurry
hurt
hut
ice
ice cream
if
I'll
ill
I'm
in
inch
inform
ink
inside
into
is
it
its
it's
itself
jail
jar
job
joy
July
jump
jumped
jumping
jumps
June
just
keep
keeping
keeps
key
kick
kid
kids
kill
killed
kind
kindly
king
kiss
kite
kitten
kittens
knife
know
lady
lake
lakes
lamp
land
landed
lands
language
large
larger
last
lasted
late
later
law
lay
lead
leader
learn
least
leave
leaves
left
leg
legs
less
lesson
let
lets
letter

letters
life
light
lights
like
liked
likes
line
lines
lion
list
little
live
lived
lives
living
load
log
logs
long
longer
look
looked
looking
looks
lose
lost
lot
lots
love
loved
lovely
loves
low
lower
luck
lumber
lunch
mad
made
mail
mailed
mailing
make
makes
making
mamma
man
many
map
March
mark
market
master
matter
may
May
maybe
me
meal
mean
means
meat
meet
meeting
men
mice
might
mile
miles
milk
mill
mind
mine
miss
Miss
Monday
money
month
moon
more
morning
most
mother
mothers
mouse
mouth
move
moved
moving
much
mud
must
my
myself
nail
nails
name
named
names
nap
near
nearly
neat
neck
need
nest
net
never
new
news
next
nice
night
nights
nine
no
nobody
none
noon
nor
north
nose
not
note
noted
notes
nothing
now
number
numbers
nut
o'clock
October
of
off
often
oh
oil
old
older
on
once
one
ones
only
open
opened
opening
or
other
others
our
out
outdoors
outfit
outside
over
overlooked
own
packed
packing
page
pages
pail
paint
pair
pan
paper
papers
park
parks
part
parts
party
pass
passing
past
path
pay
paying
pen
penny
people
person
pet
pets

pick
picked
pie
pig
pigs
pin
pine
pink
pipe
place
plan
plane
plant
planted
plants
plate
play
played
playing
plays
please
pole
poles
pond
pony
pool
poor
porch
post
pound
pray
price
print
pull
pulled
pulling
pump
puppy
push
put
puts
queen
race
railroad
railway
rain
rained

raining
ran
ranch
rang
rat
rate
rather
reach
read
reading
ready
real
recall
red
rent
replace
report
rest
return
rice
rich
ride
rides
riding
right
ring
rings
river
rivers
road
roads
rock
roll
rolled
roof
room
rooms
rope
rose
roses
round
row
rubber
rug
rule
run

runs
rush
sad
safe
sail
sake
said
sale
salt
same
sand
sang
sat
save
saved
saving
saw
say
saying
school
schoolhouse
schools
sea
seat
see
seed
seeds
seeing
seem
seen
sees
sell
selling
send
sending
sent
September
set
sets
seven
shall
she
sheep
shell
ship
ships

shoe
shoes
shop
shore
short
show
showed
showing
shows
shut
sick
side
sides
sidewalk
silk
sing
singing
sings
sir
sister
sisters
sit
six
sixteen
sixth
size
skin
skins
sky
sleep
sleeping
sleeps
slide
slip
slow
small
smart
smell
smoke
snake
snow
snowball
snowballs
snowing
so
soap

soft
sold
some
somebody
someone
something
sometime
sometimes
somewhat
son
song
songs
soon
sooner
sorry
sort
sound
south
speed
spell
spelling
spend
spent
spoke
sport
sports
spot
spring
stage
stamp
stamps
stand
standing
stands
star
stars
start
starts
state
stay
stayed
staying
step
still
stone
stones
stop

store
stores
storm
story
stove
street
streets
string
strong
study
such
sum
summer
sun
Sunday
supper
sweet
swim
swing
table
tag
tail
take
taken
takes
taking
talk
talked
talking
talks
tall
tea
teach
teacher
teaching
team
tell
telling
tells
ten
tent
tents
test
than
thank
thanking
thanks

that
the
them
then
there
these
they
thick
thin
thing
things
think
third
this
those
three
tie
tiger
till
time
times
tin
tire
to
today
told
tonight
too
took
top
tops
town
toy
toys
track
trade
train
trains
trap
tree
trees
trick
trip
truck
trucks
true
try

trying
Tuesday
turn
two
under
understand
up
upon
us
use
used
very
vote
wake
walk
walked
walking
wall
walls
want
wanted
wanting
wants
war
warm
was
wash
washed
washing
water
way
ways
we
weak
week
weeks
well
wells
went
were
west
wet
what
whatever
wheels
when
where

white
who
why
wide
wife
wild
will
willing
win
wind
window
wing
wings
winter
wire
wise
wish
wished
wishing
with
within
without
woke
won
won't
wood
wooden
woods
word
words
wore
work
worked
working
works
world
would
write
yard
yards
year
years
yellow
yes
yesterday
yet
you
your
yours
zoo

APPENDIX B

WORD-GROUPS ACCORDING TO STRUCTURAL PATTERNS

MONOSYLLABIC BASE WORDS

act
add
age
air
all
am
an
and
are
arm
art
as
ask
at
aunt
back
bad
bag
ball
band
bank
bark
barn
base
bat
bath
be
beach
bear
beat
bed
bee
bell
belt*
bet
big
bill
bird*
bite
black

blank
block
blow
blue
boat
bone
book
born
both
bow
box
boy
brave
bread
brick
bright
bring
brown
brush
bull
bunch
burn
bus
but
buy
by
cage
cake
call
camp
can
cane
cap
car
card
care
cart
case
cash
cat

catch
cave
cent
chair
cheer
child
class
clay
clean
clear
climb
clock
close
clown
club
coal
coat
cold
come
cook
cool
corn
cost*
count
cow
cream
crop
cross
cry
cup
cut
dad
dance
dark
date
day
dead
dear
deep
deer

desk
die
dig
dish
do
dog
doll
door
down
draw
dream
dress
drink
drive
drop
dry
duck
dust
each
ear
earth
east
eat
egg
eight
end
eve
eye
face
fall
far
farm
fast
fat
fear
feast
fee
feed
feel
feet

---

*Words which can be grouped with those in other structural groups.

few
fight
fill
find
fire
fish
fit
five
fix
flag
flat
fly
food
foot
for
form
fort
four
fox
friend
frog
from
full
fun
fur
game
gas
gate
gay
get
gift
girl
give
glad
glass
go
goat
God
gold
good
grade
grand
grass
gray
great
green
ground

grow
gun
hair
half
hall
hand
hard
has
hat
hate
have
hay
he
head
hear
heat
help*
hen
her
here
hide
high
hike
hill
him
his
hit
hog
hold
hole
home
hook
hop
hope
horn
hot
hour
house
how
hug
hunt
hurt
hut
ice
if
ill
in

inch
ink
is
it
jail
jar
job
joy
jump
June
just
keep
key
kick
kid*
kill
kind
king
kiss
kite
knife
know
lake
lamp
land
large
last
late
law
lead
learn
leave
leg
let
life
light
like
line
list
live
load
log
long
look
lose
lot

love
low
luck
lunch
mad
mail
make
man
map
March
mark
may
May
me
meal
mean
meat
meet
mile
milk
mill
mind
mine
miss
Miss
month
moon
mouse
mouth
move
much
mud
must
my
nail
name
nap
near
neat
neck
need
nest
net
new
next
nice
night

nine
no
none*
noon
nor
north
nose
not
note
now
nut
of
off
oh
oil
old
on
once
one
or
our
out
page
pail
paint
pair
pan
park
part
pass
path
pay
pen
pet
pick
pie
pig
pin
pine
pink
pipe
place
plan
plane
plant
plate
play
please
pole
pond
pool
poor
porch
post*
pound
pray
price
print
pull
pump
push
put
queen
race
rain
ranch
rat
rate
reach
read
real
red
rent*
rest
rice
rich
ride
right
ring
road
rock
roll
roof
room
rope
rose
round
row
rug
rule
run
rush
sad
safe
sail
sake
sale
salt
same
sand
save
say
school
sea
seat
see
seed
seem
sell
send
set
shall
she
sheep
shell
ship
shoe
shop
shore
short
show
shut
sick
side
silk
sing
sir
sit
six
size
skin
sky
sleep
slide
slip
slow
small
smart
smell
smoke*
snake
snow
so
soap
soft
some
son
song
soon
sort
sound
south
speed
spell
spend
sport
spot
spring
stage
stamp
stand
star
start
state
stay
step
still
stone
stop
store
storm
stove*
street
string
strong
such
sum
sun
sweet
swim
swing
tag
tail
take
talk
tall
tea

teach
team
tell
ten
tent
test
than
thank
that
the
them
then
there
these
they
thick
thin
thing
think
this
those
three
tie
till
time
tin
tire
to
too
top
town
toy
track
trade
train
trap
tree
trick
trip
truck
true
try
turn
two
up
us
use
vote
wake
walk
wall
want
war
warm
wash
way
we
weak
week
well
west
wet
what
when
where
white
who
why
wide
wife
wild
will
win
wind
wing
wire
wise
wish
with
wood
word
work
world
write
yard
year
yes
yet
you
your
zoo

DUO-PLURI-SYLLABIC BASE WORDS

able
about
above
after
any
apply
April
baby
begin
body
brother
butter
candy
carry
cattle
city
cover
danger
dinner
early

enter
even
ever
every
father
finger
flower
forest
garden
happen
happy
hurry
July
kitten
lady
language
lesson
letter
lion
little

lumber
mamma
many
market
master
matter
money
morning
mother
never
number
October
often
only
open
other
over
paper
party
people

person
pony
rather
ready
river
rubber
September
seven
sister
story
study
summer
supper
table
tiger
under
very
water
window
winter
yellow

WORDS WITH -S INFLECTION

apples
arms
balls
beans
bears
becomes
beds
bees
bells
besides
bills
birds
boats
bones
books
boots
boys
brings

brothers
bugs
bushes
cakes
calls
cards
cars
cats
cents
chairs
children
coats
comes
covers
cows
dates
days
dishes

does
dogs
dolls
doors
ducks
ears
eats
eggs
eyes
faces
falls
farmers
farms
fathers
flowers
foods
forms
games

gets
girls
gives
goats
goes
goods
grades
guns
hands
hats
heads
helps
hills
holes
homes
hopes
hours

houses
its
jumps
keeps
kids
kittens
lakes
lands
leaves
legs
lets
letters
lights
likes
lines
lives
logs
looks
lots
loves
makes
means
men*
mice*
miles

mothers
nails
names
news
nights
notes
numbers
ones
others
outdoors
pages
papers
parks
parts
pets
pigs
plants
plays
poles
puts
rides
rings
rivers
roads
rooms

roses
runs
schools
seeds
sees
sets
ships
shoes
shows
sides
sings
sisters
skins
sleeps
snowballs
sometimes
songs
sports
stamps
stands
stars
starts
stones
stores
streets

takes
talks
tells
tents
thanks
things
times
tops
toys
trains
trees
trucks
walls
wants
ways
weeks
wells
wheels
wings
woods
words
works
yards
years
yours

WORDS WITH -D INFLECTION

added
asked
ate*
became*
bit*
brought
called
came*
closed
cooked
could
dated
did*
dressed
drove*
dug*
ended*
fell*
felt*
filled
forgot

found*
gave*
got*
had*
held
helped
hunted
jumped
killed
landed
lasted
lay*
left
liked
lived
locked
lost*
loved
made*
mailed
might*

moved
named
noted
opened
overlooked
packed
picked
planted
played
pulled
rained
ran*
rang
rolled
said
sang
sat*
saved
saw*
sent*
showed

sold*
spent*
spoke*
stayed
talked
told*
took*
used
walked
wanted
was
washed
went*
were
wished
woke*
won*
wore*
worked
walked
would

WORDS WITH OTHER AFFIXES

Words with Prefixes

almost
already
also
always
delay
recall
replace
report
return
yesterday

Words with -er Suffix

best*
better*
farmer
faster
higher
larger
later
leader
least*
less
longer
lower
more*
most*
older
sooner
teacher

Words with -ing Suffix

asking
being
blowing
burning
buying
calling
camping
coming
cooking
covering
crying
doing
drawing
eating
falling
farming
feeding
filling
finding
fishing
flying
getting
giving
going
growing
hanging
having
hearing
helping
holding
hunting
jumping
keeping
living
looking
mailing
making
meeting
moving
opening
packing
passing
paying
playing
pulling
raining
reading
riding
saving
saying
seeing
selling
sending
showing
singing
sleeping
snowing
spelling
standing
staying
taking
talking
teaching
telling
thanking

Words with -teen Suffix

sixteen

Words with -th Suffix

first
third
sixth

Words with -n Suffix

done
eaten
given
golden
gone
past*
seen
taken
wooden

Words with -ly Suffix

badly
kindly
lovely
nearly

Words with -day Suffix

Friday
Monday
Sunday
Tuesday

Words with -y Suffix

busy
daddy
funny
penny
puppy
sorry

COMPOUNDS

across
afternoon
again
ago
ahead
airplane
airport
alone
along
another
anyone
anything
anyway
anywhere
apart
around
asleep
away
become
because
bedroom
before
behind
belong
below
beside
birthday
cannot
cowboy
everything
everywhere
football
forget
forgive
good-bye
grandfather
grandmother
herself
himself
however
ice-cream
inform
inside
into
itself
maybe
myself
nobody
nothing
outfit
outside
railroad
railway
schoolhouse
sidewalk
snowball
somebody
someone
something
sometime
somewhat
today
tonight
understand
upon
whatever
within
without

CONTRACTIONS

- can't
- don't
- I'll
- I'm
- it's
- o'clock
- won't

APPENDIX C

SUB-GROUPS OF WORDS

MONOSYLLABIC BASE WORDS

Initial Sound-Unit Variant

1. day
gay
hay
lay
May
may
pay
say
way
clay
gray
play
pray
stay

2. ill
bill
fill
hill
kill
mill
till
will
still

3. king
ring
sing
wing
thing
bring
swing
spring
string

4. bow
low
row
show
blow
grow
slow
snow
know

5. all
ball
call
fall
hall
tall
wall
small

6. at
bat
cat
fat
hat
rat
flat
that

7. bet
get
let
net
pet
set
wet
yet

8. by
my
fly
cry
dry
sky
try
why

9. cake
lake
make
sake
take
wake
snake

10. and
band
hand
land
sand
grand
stand

11. date
gate
hate
late
rate
plate
state

12. ear
dear
fear
hear
near
year
clear

13. bell
tell
sell
well
shell
smell
spell

14. jail
mail
nail
pail
sail
tail

15. an
can
man
pan
than
plan

16. eat
beat
heat
meat
neat
seat

17. hen
men
pen
ten
then
when

18. kick
pick
sick
thick
brick
trick

19. hop
top
shop
stop
drop
crop

20. bad
dad
mad
sad
glad

21. art
cart
part
smart
start

22. be
he
me
we
she

23. bee
fee
see
tree
three

24. hide
ride
side
wide
slide

25. fight
[illegible]ght
might
right
bright

26. pin
tin
win
thin
skin

27. fine
line
mine
nine
pine

28. but
cut
hut
nut
shut

29. age
cage
page
stage

30. air
hair
pair
chair

31. cap
map
nap
trap

32. far
jar
war
star

33. bark
dark
mark
park

34. pass
class
glass
grass

35. each
beach
reach
teach

36. feed
need
seed
speed

37. deep
keep
sheep
sleep

38. nest
rest
test
west

39. ice
nice
rice
price

40. ink
pink
think
drink

41. fit
hit
sit

42. bite
kite
write
white

43. dog
hog
log
frog

44. old
hold
cold
gold

45. book
cook
hook
look

46. fort
sort
short
sport

47. nose
rose
those
close

48. hot
lot
not
spot

49. pound
round
sound
ground

50. down
town
brown
clown

51. fun
gun
run
sun

52. face
race
place

53. back
black
track

54. bag
tag
flag

55. game
name
same

56. camp
lamp
stamp

57. bank
blank
thank

58. card
hard
yard

59. arm
form
warm

60. as
gas
has

61. cave
save
brave

62. dead
head
bread

63. team
cream
dream

64. neat
sweet
street

65. end
send
spend

66. cent
rent
tent

67. die
pie
tie

68. life
wife
knife

69. big
dig
pig

70. find
kind
mind

71. ship
slip
trip

72. fire
tire
wire

73. dish
fish
wish

74. kiss
miss
Miss

75. go
no
so

76. do
to
who

77. boat
coat
goat

78. rock
block
clock

79. long
song
strong

80. food
good
wood

81. cool
pool
school

82. moon
noon
soon

83. or
for
nor

84. born
corn
horn

85. cow
how
now

86. boy
joy
toy

87. duck
luck
truck

88. bull
full
pull

89. dust
just
must

90. grade
trade

91. rain
train

92. talk
walk

93. cane
plane

94. bath
path

95. base
case

96. fast
last

97. law
draw

98. sea
tea

99. read
lead

100. meal
real

101. mean
clean

102. east
feast

103. bed
red

104. green
queen

105. deer
cheer

106. there
where

107. few
new

108. hike
like

109. child
wild

110. milk
silk

111. him
swim

112. his
this

113. five
drive

114. give
live

115. fix
six

116. hole
pole

117. some
come

118. bone
stone

119. too
zoo

120. shore
store

121. load
road

122. note
vote

123. house
mouse

124. mouth
south

125. box
fox

126. much
such

127. blue
true

128. jump
pump

129. bunch
lunch

130. aunt
hunt

131. hug
rug

132. up
cup

133. burn
turn

134. us
bus

135. rush
brush

Medial Sound-Unit Variant

1. barn
born
burn

2. far
for
fur

3. last
list
lost

4. bath
both

5. deer
door

6. live
love

7. mad
mud

8. pet
put

9. step
stop

10. want
went

11. wash
wish

Final Sound-Unit Variant

1. win
wing
wish
with

2. wide
wife
wire
wise

3. care
case
cane

4. if
in
is

5. meal
mean
meat

6. seed
seem
seen

7. am
an

8. cool
coat

9. feed
feel

10. leg
let

11. our
out

12. rich
ring

13. roof
room

14. safe
sale

15. sing
sit

16. sum
sun

17. the
them

18. word
work

Homophones

week
weak

hour
our

by
buy

Isolates

act
add
are
ask
bear
catch
climb
club
count
cross
dance
desk
doll
dress
earth
egg
eight
eve
eye

first
friend
from
gift
girl
great
half
have
her
here
high
home
hurt
inch
job
key
large
learn
leave

lose
mile
move
neck
next
north
of
off
oh
oil
once
one
own
paint
pipe
please
pond
porch
print

push
ranch
roll
rule
said
salt
shall
shoe
sir
size
soap
soft
time
these
two
use
world
yes
you

DUO- AND PLURISYLLABIC BASE WORDS

Initial Sound-Unit Variant

1. other
   mother
   brother
2. able
   table
3. any
   many
4. father
   rather
5. ever
   never
6. lumber
   number
7. ever
   over

Medial Sound-Unit Variant

1. master
   matter
2. summer
   supper

Isolates

above
after
apple
April
baby
begin
body
butter
candy
carry
cattle
city
cover
danger
dinner
early
enter
even
every
finger
flower
forest
garden
happen
happy
hurry
July
kitten
lady
language
lesson
lion
little
mamma
market
money
morning
October
often
only
open
paper
party
people
person
pony
ready
river
rubber
September
seven
sister
story
study
tiger
under
very
water
window
winter
yellow

WORDS WITH -S INFLECTION--FIRST POSSIBILITY GROUPING

Initial Sound-Unit Variant

1. cakes
   lakes
   makes
   takes
2. calls
   falls
   walls
3. days
   ways
   plays
4. bees
   sees
   trees
5. boats
   coats
   goats
6. others
   mothers
   brothers
7. games
   names
8. hands
   lands
9. cards
   yards
10. arms
    farms
11. cars
    stars
12. parts
    starts
13. beans
    means
14. ears
    years
15. keeps
    sleeps
16. tells
    wells
17. gets
    lets
18. cents
    tents
19. rides
    sides
20. gives
    lives
21. holes
    poles
22. bones
    stones
23. goods
    woods
24. books
    looks
25. boys
    toys
26. ducks
    trucks
27. guns
    runs

Medial Sound-Unit Variant

1. balls
   bells
   bills
2. farms
   forms
3. legs
   logs
4. pets
   puts

WORDS WITH -S INFLECTION---SECOND POSSIBILITY GROUPING

Voiceless Sounds + S

1. boats
boots
cats
cents
coats
eats
gets
goats
hats
its
lets
lights
lots
nights
parks
parts
pets
plants
puts
wants
tents
sets
sports
starts
streets

2. books
ducks
looks
parks
talks
thanks
trucks
weeks
works

3. helps
keeps
jumps
tops
ships
sleeps
stamps

4. cakes
lakes
likes
makes
takes

5. dates
notes

Voiced Sounds + S

6. bears
brothers
cars
chairs
covers
doors
ears
fathers
farmers
flowers
hours
letters
mothers
numbers
others
outdoors
papers
rivers
sisters
stars
years
yours

7. beds
birds
cards
foods
goods
hands
heads
kids
lands
roads
seeds
stands
woods
words
yards

8. balls
bells
bills
calls
dolls
falls
hills
tells
walls
wells
snowballs

9. beans
guns
kittens
means
runs
skins
trains

10. bugs
dogs
eggs
legs
logs
pigs

11. rings
sings
songs
wings
brings
things

12. boys
days
toys
ways
plays
always

13. girls
nails
schools
wheels

14. arms
farms
forms
rooms

15. cows
news
shows

16. comes
becomes
games
homes
names
times
sometimes

17. eyes
bees
sees
trees
goes
shoes

18. besides
grades
rides
sides

19. apples
holes
miles
poles

20. bones
ones
lines
stones

21. gives
leaves
lives
loves

Base + es as Another Syllable

22. faces
houses
pages
roses

23. bushes
dishes

Isolates

hopes
stores

does
children

3

WORDS WITH -D INFLECTION--FIRST POSSIBILITY GROUPING

Initial Sound-Unit Variant

1. rang
   sang
2. cooked
   looked
3. talked
   walked
4. filled
   killed
5. played
   stayed
6. lasted
   planted
7. could
   would

Medial Sound-Unit Variant

1. packed
   picked
2. washed
   wished
3. lived
   loved

WORDS WITH -D INFLECTION--SECOND POSSIBILITY GROUPING

Final Voiceless Sound of Base + ed

1. asked
   cooked
   looked
   packed
   picked
   talked
   walked
   worked
   overlooked
2. washed
   wished
3. helped
   jumped

Final Voiced Sound of Base + ed or d

4. called
   filled
   killed
   pulled
   rolled
5. opened
   rained
6. played
   stayed

7. lived moved
loved saved

8. closed
used

Base + ed as Separate Syllable

9. hunted
lasted
wanted
planted

10. added
ended
landed

11. dated
noted

Isolates

brought
dressed
forgot

left
liked
mailed

named
said
showed

was
were

WORDS WITH OTHER AFFIXES

Words with Prefixes

1. almost
already
also
always

2. recall
replace
report
return

Isolates

delay
yesterday

Words with -ing Suffix--First Possibility Grouping

Initial Sound-unit Variant

1. paying
saying
playing
staying

2. showing
blowing
growing
snowing

3. selling
telling
spelling

4. talking
walking

5. calling
falling

6. filling
willing

7. fishing
wishing

8. cooking
looking

9. crying
trying

Base Words Ending in Silent e with -ing Suffix

10. taking
making

11. giving
living

Medial Sound-Unit Variant

1. washing
wishing

Words with -ing Suffix--Second Possibility Grouping

Base Word + ing

1. asking
being
blowing
burning
buying
calling
camping
cooking
covering
crying
doing
drawing
eating
falling
farming
feeding
filling
finding
fishing
flying
going
growing
hanging
hearing
helping
holding
hunting
jumping
keeping
looking
opening
packing
passing
paying
playing
pulling
mailing
meeting
raining
reading
saying
seeing
selling
sending
showing
singing
sleeping
snowing
spelling
standing
staying
talking
teaching
telling
thanking
trying
walking
wanting
washing
willing
wishing
working

Base Words Ending in Silent e Followed by Suffix ing

2. coming
giving
having
living
making
moving
riding
saving
taking

Isolate

getting

Words with -er Suffix

1. farmer
faster
higher
leader
longer
lower
older
sooner
teacher

2. larger
later

Isolate

less

Words with -n Suffix

1. eaten
golden
wooden

2. given
seen
taken

3. done
gone

Words with -day Suffix

1. Friday
Monday
Sunday
Tuesday

Word with -teen Suffix

1. sixteen

Words with -th Suffix

1. first 2. sixth 3. third (can be grouped with "bird")

Words with -ly Suffix

1. badly
   kindly
   lovely
   nearly

Words with -y Suffix

	Isolate
1. daddy	
funny	
penny	busy
puppy	
sorry	

COMPOUNDS

Consistent Word in the Initial Position

1. about
across
again
ago
ahead
alone
along
apart
around
asleep
away

2. become*
because
before
behind
belong
below
beside

3. somebody
someone
something
sometime
somewhat

4. anyone
anything
anyway
anywhere

5. inform
inside
into

6. airplane
airport

7. everything
everywhere

8. forget
forgive

9. grandfather
grandmother

10. outfit
outside

11. railroad
railway

12. today*
tonight

13. within
without

Consistent Word in the Final Position

1. herself
himself
itself
myself

2. anything
everything
nothing
something

3. beside
inside
outside

4. away
anyway
railway

5. nobody
somebody

6. however
whatever

7. anyone
someone

8. anywhere
everywhere

Isolates

afternoon
bedroom
birthday
cannot
cowboy
football
ice-cream
maybe
schoolhouse
sidewalk
snowball
understand
upon

CONTRACTIONS

1. can't
   don't
   I'll
   I'm
   it's
   o'clock
   won't

APPENDIX D

A SUGGESTED GRADE PLACEMENT OF THE WORD SUB-GROUPS

GRADE II

ill
bill
fill
hill
kill
mill
till
will
still

at
bat
cat
fat
hat
rat
sat
flat
that

be
he
me
we
she

book
cook
hook
look
took

big
dig
pig

do
to
who

cow
how
now

boy
joy
toy

bed
red

hike
like

his
this

fix
six

come
some

up
cup

if
in
is

am
an

days
says
plays

sees
bees
trees

books
looks

boys
toys

cars
stars

her
oh
one
two
yes
you

GRADE III

day
gay
bay
lay
May
nay
pay
say
way
clay
gray
pray
stay
play

all
ball
call
fall
hall
tall
wall
small

bet
get
let
net
pet
set
wet
yet

by
my
fly
cry
dry
sky
try
why

an
can
man
pan
ran
than
plan

and
band
hand
land
sand
grand
stand

ear
dear
fear
hear
near
year
clear

old
hold
cold
gold
sold
told

hop
top
shop
stop
drop
crop

bad
dad
mad
sad
glad

bee
fee
see
tree
three

hen
men
pen
ten
then

best
nest
rest
test
west

hide
ride
side
wide
slide

it
bit
fit
hit
sit

got
hot
lot
not
spot

came
game
name
same

cap
nap
nap
trap

cave
gave
save
brave

dog
hog
log
frog

down
town
brown
clown

fun
gun
run
sun

back
black
track

bag
tag
flag

card
hard
yard

as
gas
has

fast
last
past

seen
green
queen

end
send
spend

dish
fish
wish

boat
coat
goat

food
good
wood

moon
noon
soon

or
for
nor

bull
full
pull

dust
just
must

rain
train

talk
walk

read
lead

few
new

did
kid

milk
silk

him
swim

bird
third

five
drive

give
live

too
zoo

house
mouse

box
fox

much
such

blue
true

jump
pump

us
bus

barn
born
burn

far
for
fur

last
list
lost

live
love

mad
mud

pet
put

want
went

wash
wish

seed
seen
soon

leg
let

our
out

rich
ring

sing
sit

cost
lost

sum
sun

the
them

word
work

other
mother
brother

any
many

father
rather

calls
falls
walls

bees
sees
trees

boats
coats
goats

others
mothers
brothers

games
names

hands
lands

cards
yards

ears
years

gets
lets

rides
sides

lives
gives

goods
woods

balls
bells
bills

pets
puts

legs
logs

became
become

washed
wished

cooked
looked

lived
loved

paying
saying
playing
staying

calling
falling

filling
willing

cooking
looking

across
again
ago
ahead
alone
along
apart
around
asleep
away

become
became
because
before
behind
belong
below
beside

anyone
someone

cakes
lakes
makes
takes

calls
falls
walls

days
ways
plays

bees
sees
trees

boats
coats
goats

others
mothers
brothers

games
names

hands
lands

cards
yards

arms
farms

cars
stars

parts
starts

beans
means

ears
years

keeps
sleeps

tells
wells

gets
lets

cents
tents

rides
sides

gives
lives

holes
poles

bones
stones

goods
woods

books
looks

boys
toys

ducks
trucks

guns
runs

balls
bells
bills

farms
forms

legs
logs

pets
puts

boats
boots
cats
cents
coats
eats
gets
goats

hats
its
lets
lights
lots
nights
parks
parts

pets
plants
puts
wants
tents
sets
sports
starts
streets

books
ducks
looks
parks
talks
thanks
trucks
weeks
works

helps
keeps
jumps
tops
ships
sleeps
stamps

cakes
lakes
likes
makes
takes

dates
notes

bears
brothers
cars
chairs
covers
doors
ears
fathers
farmers
flowers
hours
letters
mothers
numbers
others
outdoors
papers
rivers
sisters
stars
years
yours

beds
birds
cards
foods
goods
hands
heads
kids
lands
roads
seeds
stands
woods
words
yards

balls
bells
bills
calls
dolls
falls
hills
tells
walls
wells
snowballs

beans
guns
kittens
means
runs
skins
trains

bugs
dogs
eggs
legs
logs
pigs

rings
sings
songs
wings
brings
things

boys
days
toys
ways
plays
always

girls
nails
schools
wheels

arms
farms
forms
rooms

cows
news
shows

comes
becomes
games
homes
names
times
sometimes

eyes
bees
sees
trees
goes
shoes

besides
grades
rides
sides

apples
holes
miles
poles

bones
ones
lines
stones

gives
leaves
lives
loves

faces
houses
pages
roses

bushes
dishes

paying
saying
playing
staying

showing
blowing
growing
snowing

selling
telling
spelling

talking
walking

calling
falling

filling
willing

fishing
wishing

cooking
looking

crying
trying

taking
making

giving
living

washing
wishing

coming
giving
having

living
making
moving

riding
saving
taking

asking
being
blowing
burning
buying
calling
camping
cooking
covering
crying
doing
drawing
eating
falling
farming
feeding
filling
finding
fishing
flying
going
growing
hanging
hearing
helping
holding
hunting
jumping
keeping
looking
opening
packing
passing
paying
playing
pulling
mailing
meeting
raining
reading
saying
seeing
selling
sending
showing
singing

sleeping
snowing
spelling
standing
staying
talking
teaching
telling
thanking
trying
walking
wanting
washing
willing
wishing
working

coming
giving
having

living
making
moving

riding
saving
taking

getting
hopes
stores
does
children
add
after
are
ask
candy
city
doll
egg

from
girl
happy
have
here
little
mamma
morning
of
off
open
pony
room

said
seven
time
very
was

GRADE IV

king
ring
sing
wing
thing
bring
swing
spring
string

bow
low
row
show
blow
grow
slow
snow
know

cake
lake
make
sake
take
wake
snake

date
gate
hate
late
rate
plate
state

bell
fell
tell
sell
well
shell
smell
spell

jail
mail
nail
pail
sail
tail

eat
beat
heat
meat
neat
seat

kick
pick
sick
thick
brick
trick

art
cart
part
smart
start

fight
light
might
night
right
bright

pin
tin
win
thin
skin

fine
line
mine
nine
pine

but
cut
hut
nut
shut

age
cage
page
stage

air
hair
pair
chair

bark
dark
mark
park

pass
class
glass
grass

each
beach
reach
teach

feed
need
seed
speed

deep
keep
sheep
sleep

cent
rent
sent
tent

ice
mice
nice
rice
price

ink
pink
think
drink

bite
kite
write
white

old
hold
cold
gold
sold

fort
sort
short
sport

nose
rose
those
close

hot
lot
not
spot

pound
round
sound
ground

face
race
place

bag
tag
flag

game
name
same

camp
lamp
stamp

bank
blank
thank

arm
farm
warm

cave
gave
save
brave

dead
head
bread

team
cream
dream

east
feast
least

meet
sweet
street

cent
rent
sent
tent

die
pie
tie

life
wife
knife

find
kind
mind

ship
slip
trip

fire
tire
wire

kiss
miss
Miss

rock
block
clock

long
song
strong

cool
pool
school

born
corn
horn

duck
luck
truck

grade
trade
made

cane
plane

bath
path

base
case

law
draw

sea
tea

meal
real

mean
clean

deer
cheer

there
where

child
wild

hole
pole

bone
stone

shore
store

load
road

note
vote

mouth
south

bunch
lunch

aunt
hunt

hug
rug

rush
brush

bath
both

deer
door

step
stop

win
wing
wish
with

wide
wife
wire
wise

care
case
cane

meal
mean
meat

cool
coat

feed
feel

held
help

roof
room

safe
sale

week
weak

by
buy

hour
our

able
table

master
matter

summer
supper

cakes
lakes
makes
takes

arms
farms

parts
starts

beans
means

keeps
sleeps

tells
wells

cents
tents

holes
poles

bones
stones

ducks
trucks

guns
runs

farms
forms

rang
sang

talked
walked

filled
killed

played
stayed

lasted
planted

could
would

packed
picked

almost
already
also
always

recall
replace
report
return

today
tonight

showing
blowing
growing
snowing

selling
telling
spelling

talking
walking

fishing
wishing

crying
trying

taking
making

giving
living

farmer
faster
higher
leader
longer
lower
older
sooner
teacher

larger
later

eaten
golden
wooden

given
seen
taken

done
gone

today
Friday
Monday
Sunday
Tuesday

daddy
funny
penny
puppy
sorry

anyone
anything
anyway
anywhere

inform
inside
into

airplane
airport

everything
everywhere

forget
forgive

grandfather
grandmother

outfit
outside

railroad
railway

within
without

herself
himself
itself
myself

anything
everything
something

beside
inside
outside

away
anyway
railway

nobody
somebody

however
whatever

anywhere
everywhere

can't
don't
I'll
I'm
it's
o'clock
won't

rang
sang

cooked
looked

talked
walked

filled
killed

played
stayed

lasted
planted

could
would

packed
picked

washed
wished

lived
loved

asked
cooked
looked
packed

picked
talked
walked
worked
overlooked

washed
wished

helped
jumped

called
filled

killed
pulled
rolled

opened
rained

played
stayed

lived
loved

moved
saved

closed
used
hunted
lasted
wanted
planted
added
ended
landed
dated
noted

act
apple
bear
begin
body
brought
busy
butter
carry
catch
cattle
children
climb
club
count
cover
cross
dance
danger
desk
does
dress
dressed
early
earth
eight
enter
eve
even
eye
every
finger
first
flower
forest
forgot
friend
garden
gift
great
half
happen
high
home
hurry
hurt
key
kitten
inch
job
lady
language
large
learn
leave
left
lesson
liked
lion
lose
mailed
market
mile
money
move
named
neck
next
north
nothing
oil
once
only
own
paint
paper
party
people
person
pipe
please
pond
porch
print
push
ranch
ready
river
roll
rubber
rule
said
salt
shall
shoe
should
sixteen
sixth
study
sister
size
soap
soft
story
tiger
under
was
water
were
window
winter
wise
world
use
yellow